

FACTORS CONTRIBUTING TO THE NON-URGENT USE OF
THE EMERGENCY DEPARTMENT BY CANADIAN TRIAGE AND ACUITY
SCALE IV AND V PATIENTS IN SUDBURY, ONTARIO

by

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Abstract

In Canada, it is estimated that 57% of all emergency department (ED) visits are for less-urgent or non-urgent care needs (Hodgins & Wuest, 2007). Factors that contribute to the non-urgent use of ED services include lack of resources, insufficient access to care, and lack of awareness regarding available health care options (Fieldston, Alpern, Nadel, Shea & Alessandrini, 2012). The goal of this quantitative descriptive design study was to determine the relationship between having access to a primary health care provider, utilizing community based health care supports, and the patient's perception of illness, with the adult patient's decisions for presenting to the ED with non-urgent care needs.

Of the 119 respondents, 71.3% had access to a primary health care provider. A majority of the respondents (70.1%) perceived the threat of their illness as moderate. Those without registration with a primary care provider had a significantly higher perceived threat of illness than those with a primary care provider. Results indicate that 72.6% of respondents presented to the ED because of a perceived urgency of need for care, and 48.7% of participants came to the ED because they thought they required ED services. Identifying why people present to the ED with non-urgent care needs can assist health care providers and decision makers to enhance their understanding of the patient's expectations of health care services and their perception of illness.

Keywords: Emergency department, non-urgent, patient perception, Canadian Triage and Acuity Scale (CTAS), General System Theory

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Chapter 1

Introduction

In Canada, it is estimated that 57% of all emergency department (ED) visits are for less-urgent or non-urgent care needs (Hodgins & Wuest, 2007). Factors that contribute to the non-urgent use of ED services include lack of resources, insufficient access to care, and lack of awareness regarding other available health care options (Field & Lantz, 2006; Fieldston, Alpern, Nadel, Shea & Alessandrini, 2012). Use of the ED by non-urgent patients whose health concerns could have been managed through primary health care contributes to overburdened facilities, increased costs, workload and wait times, and potentially poorer outcomes for patients requiring urgent care (Durand et al., 2012; Hodgins & Wuest, 2007; Ross-Adjie, Leslie & Gillman, 2007; Tsai, Chen & Liang, 2011). Reasons commonly cited for patient presentation to the ED with non-urgent care needs include accessibility to care, perception of need, referral, familiarity, and convenience (Afilalo et al., 2004; Bengner & Jones, 2008; Field & Lantz, 2006; Han, Ospina, Blitz, Stome & Rowe 2007; Howard et al., 2005; Lega & Mengoni, 2008; Wong, Liu, Chang & Chow, 2006).

1.1 Background and Relevance

The responsibility for provision of health care services in Ontario is distributed regionally among 14 Local Health Integration Networks (LHIN). Sudbury, Ontario falls within the North Eastern LHIN, which spans 400,000 square kilometers. There are 565,000 people living within this LHIN, and cities incorporated into this region include Sault Ste. Marie, Sudbury, Timmins, Parry Sound, North Bay, and Cochrane. Within the North Eastern LHIN there are 25 hospitals, six community health centres, 27 family

health teams, six nurse practitioner led clinics, five public health units, and 538 family physicians. Upon comparing ED visits per population among Ontario's LHINs, it is the North Eastern LHIN which experiences the highest rate of ED visits per population. Specifically, the population within this LHIN has a higher rate of smoking, obesity, hypertension, chronic obstructive pulmonary disease, diabetes, and arthritis when compared to the provincial average. By the year 2036, the proportion of people aged 65 and over within this LHIN is expected to increase by 65% (North East Local Health Integration Network, 2013).

Health Sciences North is a tertiary care academic health sciences centre serving the North Eastern district of Ontario, including citizens of the City of Greater Sudbury. The ED at Health Sciences North was host to 63,303 visits in 2013, 19.8% of which were for less-urgent or non-urgent needs (Ministry of Health and Long Term Care [MOHLTC], 2014). The Canadian Triage and Acuity Scale (CTAS) is a scale used to measure the severity of a patient's condition when presenting to an ED in Canada. This is a five point scale, with CTAS I indicating the need for immediate medical attention, and CTAS IV relating to non-urgent patients, whose care could be delayed or referred elsewhere (Manos, Petrie, Beveridge, Walter & Ducharme, 2002; Murray, 2003). Specifically, in 2013 the ED at Health Sciences North received 1,487 CTAS V and 10,122 CTAS IV visits. The average wait time for CTAS IV and CTAS V patients presenting to the Health Sciences North ED is 2.3 hours, 0.5 hours longer than the average within the North East LHIN, and 0.35 hours longer than the provincial average for this demographic (MOHLTC, 2014).

A significant number of non-urgent ED visits can be adequately treated in a primary health care setting. However, in the absence of accessible primary health care, patients are presenting to the ED, thus adding to the total visit volume (Callen, Blundell & Progmet, 2008; Durand et al., 2012; Siminski, Bezzina, Lago & Eagar, 2008; Tsai et al., 2011). This is an important phenomenon recognized by the Ontario Ministry of Health and Long Term Care (MOHLTC), through their Quality Improvement Plan. In fact, monitoring of non-urgent ED visits is one of many system indicators being measured and monitored for the purpose of quality assurance. Health care organizations in Ontario must now include monitoring of non-urgent ED visits within their Quality Improvement Plan. They must also track indicators such as timely access to primary care when needed, patient experience, primary care visits post hospital discharge, hospital readmission rate for primary care patient populations, and the percent of patient population whose cancer screening is up to date (MOHLTC, 2014c). From a systems perspective, non-urgent presentations to the ED are correlated with increased workload, diverted ambulances, increased costs to the health care system, and longer wait times (Durand et al., 2012; Graham, Kwok, Tsang & Rainer, 2009; Sanders, 2000; Tsai et al., 2011).

Nationally, upwards to four million Canadians are without a family doctor, and more than two million Canadians report difficulty accessing health care services for non-urgent care needs (Glazier, Klein-Geltink, Kopp, & Sibley, 2009). In Ontario, 94% of adults are registered with a primary health care provider, leaving 6% of Ontario's adult population (667,000 adults), without a primary care provider. Meanwhile, 88.6% of adult citizens in Sudbury are registered with a primary health care provider, leaving 11.4%

(16,000 adults) without a primary care provider (MOHLTC, 2014b). The Canadian Institute for Health Information (2012), through its National Ambulatory Care Reporting System, reported that 13.9% of CTAS IV and 14.9% of CTAS V patients presenting to the Health Sciences North ED are without a primary care provider. This is relevant because it has been noted that patients without a primary health care provider are 3.5 times more likely to utilize the ED (Han et al., 2007).

Timeliness of being able to book an appointment with a primary care provider is also an important consideration. The Quality Improvement Plan (MOHLTC, 2014c) identifies timely access to primary care as an imperative priority indicator for quality improvement within primary care organizations. On average, 45% of adult patients in Ontario who are registered with a primary care provider are able to see their provider on the same day or the next day when they are sick. Within Sudbury, 37.6% of adult patients are able to see their provider on the same day or the next day, in comparison to 31.2% within the North Eastern LHIN. These are important statistics to understand, because if patients are unable to obtain a timely appointment with their primary care provider, they are more likely to present to the local ED, thus increasing the total ED visit volume (MOHLTC, 2014b).

Extensive use of the ED precipitates concern among nursing staff. A peer review of Health Sciences North in October 2012 reported the expressed concern of ED nurses regarding patient safety, increasing workload, and the quality of care provided (Martin, 2012). This is reason for concern, as nurses feel they are compromising patient care and patient safety due to overwhelming workloads. Baldursdottir, Jonsdottir and Raykjavik (2002) explain that heavy workload forces nurses to prioritize their care to the most

critically ill patients, thus leaving non-urgent patients at risk for neglect. This risk for neglect can ultimately hinder the ability of nurses to provide safe and ethical care. The College of Nurses of Ontario (2009), outlines ethics as a Professional Standard, and indicates it is demonstrated by maintaining commitments to the patient and refraining from neglect.

1.2 History of the Emergency Department

Emergency departments were initially established in the 20th century to provide triaged care for patients who were suffering from severe or potentially life-threatening illnesses, had been in an accident, or were subjected to traumatic injury. The ED served as a way to ensure access to health care 24 hours a day, seven days a week (Brim, 2008). Since the 1950's, hospitals have been considered the centre of healthcare delivery in Canada, whereby the ED serves as the main access point to hospital services (Ontario Hospital Association, 2006; Roberge, Pineault, Larouche & Poirier, 2010). In 1957 Canada's Hospital Insurance and Diagnostic Services Act was established, which provided free health care to patients in hospitals and outpatient clinics, but not private medical offices. This influenced the perceptions of Canadians to first seek treatment where it was free, therefore within the hospital system (Roberge et al., 2010).

However, in Canada in the 1990s, the philosophy of delivering health care was changing. The overarching goals were to deliver appropriate and prompt care, but also to ensure adequate customer service. This emerging focus on customer service encouraged EDs to deliver care to those with less urgent care needs within a reasonable time frame that aligned with public expectations. Thus, the use of the ED for non-urgent care needs has consistently increased over the last 30 years (Murray, 2003).

It is now recognized that the main functions of an ED in Canada are to provide urgent care to patients after suffering a trauma or acute illness, provide services that can only be offered at a hospital ED, provide care to patients when their primary care provider is unavailable, and to ensure the delivery of consistent care. The current care delivery model requires the ED to provide care to all who seek it (Guttman, Zimmerman & Nelson, 2003). Additionally, hospital EDs now serve as an avenue for primary care, diagnostic services and specialist physicians, all services that can be difficult to access otherwise (Roberge et al., 2010).

1.3 Primary Health Care Reform in Canada

Primary health care reform in Canada was initiated in the early 2000s. The main focus was towards a shift in primary care delivery to multidisciplinary teams providing comprehensive services to their patient population. These teams focus on health promotion, disease prevention, and chronic disease management. Ultimately they enhance accessibility to primary health care services, and promote a more efficient use of resources. The federal government, through its primary health care transition fund, strived to facilitate the transformation of primary care provision towards a team approach. Specific goals included the development of primary health care teams, 24-hour telephone advice lines, as well as improved chronic disease management, health promotion, and illness/injury prevention strategies (Health Canada, 2012).

During the last 12 years, primary health care reform in Canada has evolved in relationship to organizational infrastructure, provider payment, and quality improvement (Strumpf et al., 2012). The development of multidisciplinary teams working together to deliver primary care has enhanced accessibility to primary care and continuity of services

for many Canadians. Multidisciplinary team models, such as Family Health Teams, support implementation of health promotion and disease prevention (Donald et al., 2010; Strumpf et al., 2012). Since the 1970's the role of nurse practitioners has evolved, and specifically since the early 2000s there has been an emphasis on their role and the positive impact nurse practitioners can have on accessibility to services, health promotion, and patient outcomes. They have been instrumental in facilitating equitable access to services in rural and remote locations, as 24% of nurse practitioners in Canada work in rural and remote settings (Donald et al., 2010).

Physician payment methods, such as fee for service, capitation, salary, or alternative funding arrangements, can be utilized in an effort to improve quality of care, cost effectiveness, and physician recruitment to under-served regions (Glazier et al., 2009; Gosden et al., 2006; Schull & Vermeulen, 2005). However, the impact of physician remuneration on the provision of care within a health care agency must be acknowledged. With the prevalence of non-urgent use of ED services, it must be recognized that ED physicians are self-employed professionals, some of who may be permitted to bill for each service provided to a patient (Canadian Medical Association, 2012). Historically in Canada, physicians were paid on a fee-for-service basis, enabling them to bill for each service provided to a patient. With primary health care reform, there was a shift of physician payment towards capitation. As of 2003, methods of payment other than fee-for-service accounted for 11% of clinical earnings for physicians in Canada (Fooks, 2004). Ultimately, non-urgent patients can increase the volume of services being provided at an ED, which can enhance billing capabilities, and is sometimes thought to influence a physicians behavior and decision making (Gosden et al., 2006).

1.4 Nursing in the Emergency Department

Unique stressors specific to the ED include overcrowding, systemic pressures to improve treatment times, and delays in transfer to inpatient beds (Hooper, Craig, Janvrin, Wetsel & Reimels, 2012). Specifically within Canada, ED overcrowding has become an increasingly prominent issue over the last 20 years (Affleck, Parks, Drummond, Rowe & Ovens, 2013). Canadian EDs are facing many challenges, including increased patient acuity, increasing workload, limited budgets, and an increasing focus towards measures of patient satisfaction. Over time, these pressures affect front line staff (Garcia-Izquierdo & Rios-Risquez, 2012; Hooper et al., 2012), and within Ontario's overcrowded EDs, nurses are expected to work under pressure, while providing quality and timely care (MOHLTC, 2010).

Stressors often experienced specifically by ED nurses include a lack of resources and social supports, dealing with death and suffering of patients, as well as increasing workload and systemic pressures to improve treatment times. Ultimately these stressors can lead to burnout, increased absenteeism and staff turnover, decreased productivity, and errors (Garcia-Izquierdo & Rios-Risquez, 2012; Hooper et al., 2012). At an individual level, these circumstances can negatively impact the quality of care delivered to patients and their families (MOHLTC, 2010).

Burnout can be defined as “a syndrome of emotional exhaustion, depersonalization and reduced personal accomplishment” (O'Mahony, 2011; p.30), and it is associated with a decreased physical and psychological wellbeing of the nurse (Garcia-Izquierdo & Rios-Risquez, 2012; Hooper et al., 2012). Specifically, when compared to other acute care areas, burnout in nursing is experienced at a higher degree by nurses

working in the ED (O'Mahony, 2011). It can be measured by emotional exhaustion and a lack of personal accomplishment (Hooper et al., 2012; O'Mahony, 2011). Consequences of burnout among nurses in the ED include a low staff morale, increased absenteeism, and decreased productivity (O'Mahony, 2011).

Burnout among nurses can significantly influence the satisfaction patients have with the care they receive, as nursing burnout has been associated with decreased patient satisfaction. Ultimately, patient satisfaction with nursing care is a strong predictor of overall satisfaction with the care received within a hospital system, and an outcome indicator frequently measured by organizations to track overall performance (Hooper et al., 2012). Therefore, it is valuable for health care organizations to strive to decrease the incidence of nursing burnout within their facility. Two recommendations cited in the literature to decrease the prevalence of burnout amongst nurses are to reduce workplace demands and increase available resources (Garcia-Izquierdo & Rios-Risquez, 2012); Both of which are difficult to implement in the current ED environment of overcrowding, increased wait times, budget constraints, and short staffing.

1.5 Research Purpose

The purpose of this quantitative descriptive design study was to explore the factors that influenced the decision of patient's with non-urgent care needs to attend the ED at Health Sciences North in Sudbury, Ontario.

1.6 Research Objective

The objective of this proposed research study was to identify factors that contribute to the non-urgent use of the ED. Specifically, the goal was to determine the relationship between having a primary health care provider, utilizing community based health care supports, and the patient's perception of illness with presentation to the ED for non-urgent care needs.

1.7 Research Questions

The proposed research questions were:

1. What are the factors that cause non-urgent (CTAS IV and CTAS V) patients to seek primary care at the ED at Health Sciences North in Sudbury, Ontario?
2. In patients designated as non-urgent, what is the relationship between patient registration with a primary health care agency or primary health care provider and the patients' decision to use ED services?
3. In patients designated as non-urgent, what is the relationship between the patient's use of community based health care supports and the patient's decision to use ED services?
4. In patients designated as non-urgent, what is the patient's perceived severity of illness when choosing to seek care at the ED at Health Sciences North in Sudbury, Ontario?

1.8 Definition of Variables

It is valuable to understand that there is no universal definition of non-urgent care. However, it has been previously defined as "a visit that does not require immediate care and can be treated in an ambulatory or primary care setting" (Afilalo et al., 2004, p.1303).

It has also been defined as, an “absence of need for resuscitative facility, urgent intervention, or rapid and/or complex diagnostic work up” (Bezzina et al., 2005; p. 473). Within this study, a non-urgent visit to the ED was identified as patients who were assigned a CTAS IV or CTAS V from the triage nurse within the ED at Health Sciences North.

There were four research variables included within this study. They included whether or not the patient had a primary health care provider or utilized any community based health care supports, the patient’s perception of illness, and the factors contributing to the patient’s decision to seek care at the ED. Variables were operationalized within a self-administered questionnaire, and are defined below.

Primary health care is defined as “the provision of integrated, accessible health care services by clinicians who are accountable for addressing a large majority of personal health care needs, developing a sustained partnership with patients, and practicing in the context of family and community” (Newcomb, 2005; p. 3). A primary health care provider is a clinician who is responsible for the delivery of primary health care to patients. For the purpose of this study, access to a primary health care provider was operationalized through the question about whether the patient was registered in a family practice and had access to a family doctor or nurse practitioner. Patients who expressed registration in a family practice were asked if they would have been able to see their provider for care on the same day they presented to the ED.

Community based health care supports were defined as programs or services that a patient utilizes or attends in an effort to maintain or improve their health and wellbeing. Community based health care supports were operationalized by the participant’s response

to the question about if they use any health care services at home, and whether or not they attend programs or educational sessions about their health. Participants chose from a list of community based health care supports that included: home care, home oxygen, TelAsk, diabetes education and care, cardiac rehabilitation, pulmonary rehabilitation, virtual ward, congestive heart failure clinic, asthma clinic, HAVEN program, mental health and addictions program, cancer clinic, dialysis, Assertive Community Treatment Team (ACTT), geriatric and adult day program, brain injury rehabilitation, and outpatient physical rehabilitation.

Patient perception of illness was defined as the psychological processing by which one interprets and understands available sensory information through beliefs surrounding identity, etiology, timeline, consequences, and cure/control, in order to establish an understanding of experience (McDonald, 2012). A patient's perception of the urgency of need for care ultimately influences their choice of health care provider and health care organization (Fry, 2009). Patient perception of illness, as it relates to their presenting health issue, was operationalized through participant responses to the Brief Illness Perception Questionnaire component of the survey (Broadbent, Petrie, Main & Weinman, 2006).

Chapter 2

Review of the Literature

2.1 Emergency Department Usage in Canada

Each year in Canada there is an estimated 17,000,869 ED visits, 25.7% (4,361,417) of which are for less-urgent and non-urgent care needs (National Ambulatory Care Reporting System, 2014). The total number of visits to Ontario EDs in 2013 was 5,207,064, 34.6% (1,801,644 visits) of which were for less-urgent or non-urgent needs (MOHLTC, 2014). In comparison with other industrialized countries, Canada has the highest ED utilization rate, and one of the highest numbers of visits for non-urgent care needs (Roberge et al., 2010). As reported by the MOHLTC (2010), Ontario's ED physicians spend an average of 30% of their day caring for CTAS IV and CTAS V patients. Ultimately, visits to the ED for non-urgent care needs results in a cost that may be two to five times higher than the cost of care delivery through a primary care practice (Choudhry et al., 2007).

Within the provincial health system monitoring initiative, the Ontario District Health Council developed the sentinel non-urgent conditions indicator as a way to estimate the number of ED visits in Ontario that could have been adequately managed elsewhere. These sentinel non-urgent conditions, for patients aged 1 to 74 years, include: otitis media, cystitis, conjunctivitis, and upper respiratory infections. When reviewing the frequency of these visits within Ontario, it is evident that a greater proportion of non-urgent ED visits occur in rural Northern Ontario communities (Altmayer, Ardal, Woodward & Schull, 2005).

In 2011, patients aged 65 years and older accounted for 20.1% of all ED visits in Ontario (National Ambulatory Care Reporting System, 2014). This is significant because once an older adult visits the ED, research suggests they are at an increased risk for additional ED visits in the future (Horney et al., 2012; Tzeng, 2011). The number of older adults in Canada is expected to double over the next 20 years (Ontario Hospital Association, 2006). Specifically, within the North Eastern LHIN, the proportion of the population aged 65 years and over is expected to increase to 30% by the year 2036, equating to a projected increase of 65% over the next 23 years (North East Local Health Integration Network, 2013). Oftentimes, increased longevity is also associated with an increased burden of chronic illness and disability, therefore establishing a requirement for the delivery of prompt and appropriate health care, often resulting in a non-urgent ED visit (Lowthian et al., 2012).

Through their exploratory descriptive study, Lowthian et al. (2012) identified reasons older adults seek care at an ED rather than primary care. These reasons include: long wait times to obtain a primary care appointment, reduced accessibility to primary care, increased expectations for timely access to care, having been referred to the ED, social isolation, and the perception that ED care is more convenient and will offer more timely access to specialized care. The increased use of the ED by older adults results in longer wait times and increased costs of care delivery from a systems perspective. At an individual level, it has been associated with increased rates of adverse outcomes, and a lack of continuity of care after ED discharge (D'Avolio, Strumpf, Feldman, Mitchell & Rebholz, 2013; Lowthian et al., 2012).

Older adults often report having to wait two to three days for an appointment with their primary care provider, a wait time that many find frustrating (Lowthian et al., 2013). Therefore many older adults seek care at the ED for non-urgent care needs. Caring for older adults often incorporates the consideration of comorbidities, cognitive and/or functional decline, and complex social issues. Therefore often contributing to longer assessment and treatment times, and subsequently increased costs and time for care delivery (Baumbusch & Shaw, 2011). These complex needs also require follow up, and continuity of care with a primary health care provider. However with the current barriers to accessibility of primary care, a lack of continuity of care after hospital discharge often results (D'Avolio et al., 2013). For older adults this is commonly associated with rehospitalization and repeat ED visits. Thus increasing the demand for ED services and resources, in a setting of already increasing health care expenditures, increased wait times, and limited budgets (Wee et al., 2014).

Another trend in ED usage is care delivery to frequent users, characterized by patients who make three or more visits to the ED annually (Bernstein, 2006). Miller et al. (2013), in their prospective observational study, reported that although frequent users of the ED comprise only 5% of the total patients seeking ED services, they account for 21% of all ED visits. The predominant reasons frequent users will attend the ED are for substance abuse issues, as well as gastrointestinal, neurological, and psychiatric complaints (Geurts, Palatnick, Strome & Weldon, 2012). A common characteristic of frequent ED users includes being a member of vulnerable populations, often with a diagnosis of a chronic illness, psychiatric illness and/or substance abuse (Bernstein, 2006; Geurts et al., 2012; Miller et al., 2013; Wilkin, Cohen & Tannebaum, 2012). It is also

these characteristics, such as low income, substance abuse, and/or mental illness that describe patient populations who are not registered with a primary health care provider (Ding et al., 2008).

It is valuable to note that in the 1970s Canada implemented deinstitutionalization of psychiatric patients, which ultimately resulted in an increased use of the ED by patients suffering from mental illness (Roberge et al., 2010). Additionally, patients experiencing mental health issues are known to have decreased continuity of care, which is subsequently associated with increased costs of care delivery, and increased use of the ED (Kristjansson et al., 2013). Social isolation, income level below the poverty line, male gender, low levels of education, and lack of familial supports are also often cited as factors that contribute to frequent ED visits (Bernstein, 2006; Geurts et al., 2012; Lowthain et al., 2012).

2.2 Inappropriate Use of the Emergency Department

Upon review of the literature it became evident that the term *inappropriate use* is used extensively (Afilalo et al., 2004; Callen et al., 2008; Durand et al., 2012; Field & Lantz, 2006; Guttman et al., 2003; Hodgins & Wuest, 2007; Lega & Mengoni, 2008; Sanders, 2000; Sempere-Selva, Peiro, Sendra-Pina, Martinez-Espin & Lopez-Aguilera, 2001; Steele, Anstett & Milne, 2008; Tzeng, 2011), despite the fact there is no clear, universal definition of the term. It is thought to be a subjective opinion on behalf of health care professionals as to what they believe warrants an appropriate visit to the ED based on physiological data and clinical assessment (Afilalo et al., 2004; Sanders, 2011). Bezzina et al. (2005) reported that some health care professionals identify patients as inappropriate attenders based on a judgment of their social worth, and without

appreciation for the resources that are available to them. This definition fails to appreciate the multiple variables that influence a patient's presentation to the ED, including such things as timing, social circumstances and transportation availability (Bezzina et al., 2005; Hodgins & Wuest, 2007; Lega & Mengoni, 2008). In an effort to prevent the implication of patient blaming, the terms *inappropriate use* and *inappropriate users* will not be utilized within this study.

2.3 Canadian Triage and Acuity Scale (CTAS)

Triage at the ED is imperative to ensure prompt, safe, and efficient delivery of care, therefore in 1995 the Canadian Association of Emergency Physicians proposed the use of CTAS for all Canadian EDs. In 1999 CTAS was implemented (Beveridge, Ducharme, James, Beaulieu & Walter, 1999; Murray, 2003). The urgency of care required, based on the severity of the patient's condition presenting to the ED, can be determined through the use of the CTAS, as it allows one to "define patients' needs for timely care and allow EDs to evaluate acuity levels, resource needs and performance against operating objectives" (Vlahaki & Milne, 2009; p. 101).

The CTAS is a five point rating scale ranging from level I to level V, each representing a degree of acuity, time directives for assessment and clinical intervention, as well as examples of associated sentinel diagnoses. CTAS I corresponds to a patient requiring resuscitation or immediate medical attention, while CTAS II represents emergent conditions that pose a potential threat to life, limb or function, and require clinical intervention within 15 minutes. CTAS III indicates urgent conditions that if not treated within 30 minutes have the potential to progress to serious problems. CTAS IV indicates less urgent patients who are at risk of deterioration if care is not met within 90

minutes (Figure 1). While CTAS V relates to non-urgent patients who show no evidence of deterioration, whose care could be delayed or referred elsewhere, whom should receive care within 120 minutes (Figure 1) (Manos et al., 2002; Murray, 2003).

Table 1. Summary of the Canadian ED Triage and Acuity Scale (CTAS) (cont'd)				
Triage level	Acuity level	Time to physician	Usual presentation	Sentinel diagnoses
Level IV	Less urgent	≤ 1 h	Head injury: alert with no vomiting Minor trauma Acute abdominal pain Vomiting and diarrhea (age > 2 yr) without dehydration Headache: not migraine, not sudden Earache Chest pain, minor trauma or MSK injury: no distress Suicidal ideation or depression Corneal foreign body Minor allergic reaction Chronic back pain URI symptoms Pain scale 4–7/10	Head injury: alert with no vomiting Colles' fracture Ankle sprain Appendicitis Cholecystitis URI Otitis media or otitis externa Chest pain NOS (MSK, GI, respiratory) Gastroesophageal reflux Suicidal ideation or depression Urticaria Corneal foreign body Low back pain or strain
Level V	Non-urgent	≤ 2 h	Minor trauma: not necessarily acute Sore throat without respiratory symptoms Diarrhea alone, without dehydration Vomiting alone, with normal mental status and no dehydration Menses Minor symptoms Chronic abdominal pain Psychiatric complaints Pain scale < 4/10	Low back pain or strain URI Gastroenteritis Vomiting Disorders of menstruation Dressing changes or cast changes Constipation Neurotic, personality and nonpsychotic mental disorders Unspecified superficial laceration(s)
AMI = acute myocardial infarction, CHF = congestive heart failure, GI = gastrointestinal, CVA = cerebrovascular accident, NOS = not otherwise specified, COPD = chronic obstructive pulmonary disease, DTs = delirium tremens, MSK = musculoskeletal, URI = upper respiratory infection.				

Figure 1. Descriptive summary of CTAS IV and CTAS V (Manos, 2002; p. 19)

The CTAS is a reliable tool as reflected in Manos's (2002) study that reported a kappa coefficient of 0.80 for nurses and 0.82 for physicians. Psychometric testing done by Beveridge et al. (1999) indicated a reliability coefficient between nurses and physicians of 0.84, and between nurses alone 0.83. CTAS is a beneficial triage tool because England and Australia utilize the same scale, thus establishing convenient benchmarking abilities between countries for accessibility to care and patient acuity ratings (Afilalo et al., 2004; Beveridge et al., 1999). It is also a beneficial triage approach because it allows the user to evaluate the patient's symptoms and then correlate this presentation to a triage level (Manos, 2002).

Despite the aforementioned benefits of the CTAS, one must recognize the potential for inter-rater subjectivity in assigning triage levels. The demographic characteristics of triage nurses will vary with respect to their years of nursing practice, years of service in the ED, years of triage experience, educational background, and hours of previous CTAS training. All of these factors have the potential to influence the nurse's triage assessment (Worster et al., 2004).

2.4 Factors Influencing the Non-Urgent Use of the Emergency Department

Reasons identified in the literature for patients to present with non-urgent needs to the ED include limited access to alternative health care providers, perceived urgency of illness, preference for the ED, inability to obtain a timely doctors appointment, convenience, referral to the ED from other care providers, and lack of awareness of other care options (Afilalo et al., 2004; Bengner & Jones, 2008; Field & Lantz, 2006; Graham et al., 2009; Guttman et al., 2003; Sempere-Selva et al., 2001; Siminski et al., 2008; Steele et al., 2008; Tsai et al., 2011; Wong et al., 2006). Certain characteristics associated with the delivery of primary health care services have been associated with an increase in ED visits. These primary care characteristics include: comprehensiveness of available services, inadequate continuity of care, and perceived timeliness to accessing care (McCusker et al., 2010). Ultimately, use of the ED for non-urgent care needs can be attributed to the patient's understanding of their health concern and the services they may require, in combination with the services that are locally available and accessible to them (Bezzina et al., 2005). Some of the most commonly cited factors that influence a patient's decision to utilize the ED for non-urgent care needs are discussed below, with specific headings to facilitate comparison with the data analysis outlined in chapter 4.

Access and availability. The rate of ED utilization by non-urgent patients may be a reflection of health status, but it may also reflect the accessibility and availability of primary health care services within a community (Altmayer et al., 2005). Access to care can be defined as “an individual or family’s use of medical services and relative ease of obtaining treatment” (Newcomb, 2005; p. 2). It has been noted that patients who are registered with primary care practices who provide 12 or more hours of evening medical coverage per week, are 20% less likely to attend the ED (Bernstein, 2006).

As noted within the Health Council of Canada (2014) report *Where you live matters*, 62% of Canadians report that it is difficult to access medical care on the weekends, in the evening, and on holidays other than at an ED. And, when surveyed, 47% of Canadians admit that they had recently attended an ED with non-urgent care needs because their primary care provider was unavailable. A contributing factor to this is the fact that only 41% of Canadians are able to book a same day or next day appointment with their primary care provider when necessary (Health Council of Canada, 2014).

In 2010, 33% of Canadians reported having to wait six or more days for an appointment with their primary care provider the last time they required care (Strumpf et al., 2012). In reference to this, Canada ranks last amongst ten high-income countries internationally for accessibility to same-day or next-day appointments when needed, with a primary health care provider. Canadians are also known to have the longest wait time for ED care in comparison to other developed nations, with 26% of Canadians waiting more than four hours (Health Council of Canada, 2014).

Perceived urgency. Patient perception of severity of illness is the most commonly cited factor influencing a patient’s decision to present to an ED with non-

urgent care needs (Afilalo et al., 2004; Bengner & Jones, 2008; Callen et al., 2008; Durand et al., 2012; Han et al., 2007; Lega & Mengoni, 2008; Wong et al., 2006). Patient perception of severity of illness is a subjective measure that guides one's decision-making processes, and ultimately the patient's decision to utilize health care services (Callen et al., 2008; Durand et al., 2012; Fry, 2009; Nelson, 2011; Posey, 2006).

Upon comparison of perception of urgency between the patient and health care provider, 73% to 82% of patients who were deemed non-urgent by the triage nurse, perceived their needs as serious (Callen et al., 2008; Gill & Riley, 1996).

Awareness. Patient awareness of available health care options is a large contributing factor towards the non-urgent use of the ED. There is also sometimes a discrepancy between health care providers and patients about what constitutes an emergency and how to define it (Sempere-Selva et al., 2001). As noted by Wilkin et al. (2012) it is important for educational campaigns to address not only what represents an emergency, but how to evaluate symptoms and determine whether they could be potentially life threatening or not. The MOHLTC (2010) in their 2008/2009 annual report included public awareness as one of their recommendations to enhance care delivery in Ontario. They reinforced the importance of educating the public to ensure people are aware of the health care alternatives available and accessible to them, and capable of assessing their symptoms and deciding which type of facility could safely manage their care, such as an ED, urgent care centre, walk in clinic, and/or primary care practitioner's office.

Health literacy has been defined as “the capacity to obtain, process, and understand health information and services needed to make appropriate health care

decisions” (Schumacher et al., 2013; p. 654). Schumacher et al. (2013) explain that many patients with a limited health literacy rate are less likely to visit their primary care provider, and more likely to utilize ED services. They are also more likely to perceive ED care as being better than primary health care, and they will more often express a preference for delivery of care at the ED.

Convenience and geography. Many patients express that an attraction to seeking care at the ED is the variety of services and expertise they offer. Essentially, patients appreciate the convenience of ‘one stop shopping’, which avoids subsequent follow-ups and/or referrals (Wilkin et al., 2012). McCusker et al. (2010) found that geography also influences the service use patterns of EDs in Canada. It was noted that Canadians residing in rural areas are more likely to contact health care professionals within the ED setting, rather than alternative avenues of care. Reasons for this include the fact that the ED location is often more convenient and easily accessible for the patient, and/or there are limited alternative care options available within the region to which the patient resides (McCusker et al., 2010).

Specifically within Northeastern Ontario, 28% of the population resides in an urban center, in contrast to 70% overall in Ontario. This ultimately influences the accessibility to and availability of health services. In the Northeast region, 84% of the population has regular access to a primary health care provider, in contrast to the provincial average of 91% (North East LHIN, 2013).

Perception of required services. Emergency departments are dynamic practice settings, where a wide range of services, interventions, diagnostic testing, and treatments are available for all who seek it, 24 hours a day, seven days a week. Many patients

identify that they choose to seek care at the ED rather than primary care, as they are able to have the diagnostic testing, physician consultation, and clinical interventions they feel may potentially be required at a hospital, and not with a primary care provider (Han et al., 2007; Siminski et al., 2008).

Ultimately there are three known factors that influence an individual's choice in seeking health care services. These include the availability of health care resources, predisposing patient characteristics, and social norms (Newcomb, 2005). The non-urgent use of ED services affects the healthcare system as a whole due to the lack of follow up and continuity of care offered, the diversion of resources from life-threatening conditions, the negative effects of increased workload within the ED and throughout the hospital system, and finally the increased costs of delivering primary care through an ED rather than primary health care avenues within the community (Sempere-Selva et al., 2001).

2.5 Primary Health Care Services

In an effort to alleviate the stress that non-urgent visits to the ED has on the health care system, the public must be aware of their health care options, as well as the existing support systems and services available in their community (Fieldston et al., 2012; Han et al., 2007). Afilalo et al. (2004) found that only 22% of non-urgent visits to the ED are by patients who had visited their primary health care provider before attending the ED. Reasons for not seeking primary health care services were a lack of timely accessibility, perception of need, referral, as well as a preference for and trust of the care at the ED (Afilalo et al., 2004). These alternative health care options, depending on one's accessibility to services, include things such as family physicians, nurse practitioners,

TeleHealth Ontario, Family Health Teams, walk in clinics, minor injury units, urgent care centres, and after hours walk in clinics (Health Sciences North 2011; MOHLTC, 2014).

It is also important for patients to recognize the benefits of utilizing primary health care services, when available to them, as they promote continuity of care, preventive care measures and chronic disease management (Durand et al., 2012; Hudec, MacDougall & Rankin, 2010). Appropriate use of primary care is associated with enhanced health outcomes, fewer hospital admissions, appropriate follow-up, and reduced costs of care delivery (Hudec et al., 2010; Schumacher et al., 2013). Hudec et al. (2010) conducted a mixed methods action-based research study in Nova Scotia. They found that when an advanced access model of primary care was implemented, whereby 65% of primary care appointments are left open for same day appointments, there was a 28% reduction in the number of CTAS IV and CTAS V visits to the local ED, by patients enrolled in this practice. In an effort to promote sustainable health care delivery in Canada, accessibility to primary health care and after hours care delivery must be enhanced. Research suggests that patients who experience increased continuity of care with their primary care provider are less likely to visit the ED (McCusker et al., 2010).

Minor injury units are facilities that deliver care locally, to patients who seek it for injuries that are not serious enough to warrant treatment from an ED, however cannot be treated at home. Some of the health issues they treat include sprains, strains, cuts, fractures, and minor ophthalmic concerns (Aneurin Bevan University Health Board, 2010). Specifically, patients report greater satisfaction with minor injury units when compared to the ED because they experience increased health promotion screening and communication with staff, shorter wait times, enhanced standardization of care, and

appropriate referrals (Heaney & Paxton, 1997). Heaney and Paxton (1997) found that within three months of a minor injury unit opening, the number of local ED visits decreased by 24%.

Canadians who access walk in clinics with non-urgent care needs also report an attraction to the convenience and timeliness of care, and express enhanced quality of care when compared to the ED (Fry, 2011; Hutchinson et al., 2003). Telephone triage is another care option for non-urgent patients. Fry (2011) reported that telephone triage has the potential to manage approximately 50% of calls independently, without referral to the ED or family physicians, and can reduce the number of ED visits by 15%. A prospective cohort study conducted in southern Ontario revealed that patients experience greatest satisfaction with their primary health care providers in comparison to walk in clinics or the ED. Meanwhile they experience the greatest quality of care at the ED, followed by walk in clinics, and finally primary health care practices (Hutchinson et al., 2003).

In contrast to the benefits of utilizing primary health care services, the potential barriers to accessing these services must be acknowledged. These barriers include a lack of transportation, inability to take time off from work, competing time demands, and fulfilling a caregiver role for others. There are also deterring factors related to the delivery of primary health care such as long wait times, inconvenient office hours, and the need to schedule appointments much in advance. It is also important to recognize that many people are unaware of their health care options, and thus have a lack of knowledge regarding available services (Cheung, Wiler & Ginde, 2011; Wilkin et al., 2012).

2.6 Data Gaps in the Literature

Following an extensive literature review regarding patient perception of illness and non-urgent use of the ED, various data gaps were identified. The data gaps identified below supported the development of this thesis.

Few studies have been conducted in Canada regarding factors that influence a patient's decision to seek care at the ED for non-urgent care needs. The researcher encountered only six Canadian peer-reviewed studies, few of which were generalizable to Sudbury (Afilalo et al., 1995; Afilalo et al., 2004; Field & Lantz, 2006; Han et al., 2007; Hodgins & Wuest; Steele et al., 2007). Much of the existing data targets pediatric visits to the ED for non-urgent care needs, and many studies have been conducted in countries without universal health insurance coverage, thus limiting generalizability to adult populations in Canada. There were no studies that investigated the use of the ED for non-urgent care needs in relationship to the patient's use of community based health care supports and/or homecare. Finally, the majority of existing literature was published between the years 1993 and 2009, thus there is limited current data on this topic. This is relevant due to the distinct changes that have occurred within the health care system in recent years. These changes include the initiation of Family Health Teams and nurse practitioner led clinics, the increased focus on health promotion, disease prevention and chronic disease management, as well as the service use patterns associated with an aging population.

2.7 Theoretical Framework: General System Theory

The General System Theory by von Bertalanffy (1950) can be applied as the guiding theoretical framework, as it serves as a model for understanding how people interact with their environment. The General System Theory recognizes that the functioning of a system is a reflection of the interactions and relationships between components (Kaine & Cowan, 2011). A system can be defined as “a whole consisting of two or more parts whose elements continually affect each other over time as they operate toward a common purpose” (Bierema, 2003; p. 28). This theory recognizes that large suprasystems are composed of various systems and subsystems, by which there is frequent interaction between components that promotes and establishes a more dynamic, meaningful and integrative whole. The four major assumptions within this theory are that a system is more than the sum of its parts, and that a system is ever changing, boundary defined and goal directed. Through time, systems progress and evolve towards a higher level of organization (Boettcher, 1996; Christensen & Kenney, 1995; Gillies, 1982; Kast & Rosenzweig, 1981).

All systems have the following elements: input, output, throughput, feedback, control, environment, and goal (Founds, 2009; Gillies, 1982) (Figure 2). Input is information entering a system and is used to reach the system’s purpose, whereas output is the attainment of system goals. Throughput refers to the processes that occur within the system that translate input into output. Feedback is the exchange of information that establishes motivation to continue or discontinue activities in order to promote change towards achieving system goals. Goals are considered the attainment of dynamic equilibrium within the system through the continuous influx of information. Stimuli are

factors that promote action within the system, and constraints limit system activity (Boettcher, 1996; Christensen & Kenney, 1995; Gillies, 1982; Hronek & Bleich, 2002; Kast & Rosenzweig, 1981).

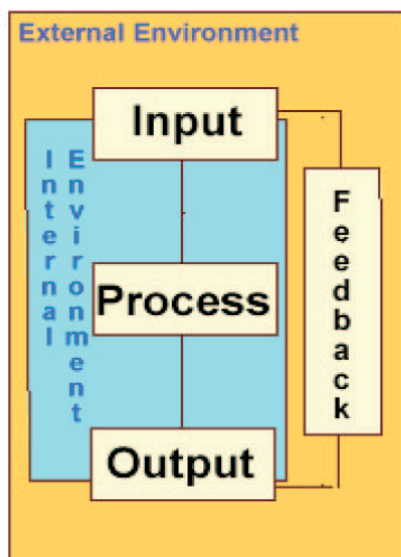


Figure 2. General System Theory: System elements (Founds, 2009; p.76)

When applying the General System Theory to this study, the suprasystem under investigation is health care delivery in the City of Greater Sudbury, which is considered an open system (Boettcher, 1996; Kast & Rosenzweig, 1981). Open systems are made up of various components that interact with their environment, and also engage in interdependent relationships (Gillies, 1982; Kaine & Cowan, 2011). The suprasystem under study is comprised of various interdependent community supports such as primary health care clinics, Family Health Teams, after hours walk in clinics, the Sudbury District Health Unit, as well as the provision of acute care services at Health Sciences North. The system under study is Health Sciences North. As an academic health sciences centre with a regional focus, Health Sciences North is composed of multiple subsystems. Healthcare

delivery within the ED at Health Sciences North is the subsystem of focus in this study. Through interactions that occur between the systems and subsystems of health care delivery in the City of Greater Sudbury, including the Health Sciences North ED, communication of information occurs. This feedback supports evolution, as it promotes change, innovation, and integration of care delivery within the system at large. Ultimately feedback obtained from system inputs, in this case a self-administered questionnaire, can be used for decision-making purposes in order to promote positive change within the system at large.

Specifically, within this research study, a self-administered questionnaire was provided to a convenience sample of participants, within the Health Sciences North ED. Data obtained from this questionnaire represented *input*. The *stressor* affecting the ED as a subsystem was the non-urgent use of ED services by patients whose needs could have been met elsewhere, with primary health care. The results of this survey conveyed *feedback* to the researcher. In turn, this feedback can promote change towards adaptation in hopes of reestablishing equilibrium within the suprasystem of health care delivery in Sudbury, and thus serve as *output* (Boettcher, 1996; Christensen & Kenney, 1995).

2.8 Conceptual Underpinning: Patient Perception of Illness

It is important to recognize that patient perception of severity of illness is the most commonly cited reason for presenting to the ED with non-urgent care needs (Afilalo et al., 2004; Benger & Jones, 2008; Callen et al., 2008; Durand et al., 2012; Han et al., 2007; Lega & Mengoni, 2008; Wong et al., 2006). Patient perception of illness is a subjective self-measurement grounded in one's sensory awareness and cognitive processing in order to establish a better understanding of a particular health issue

(Campbell, 1999; McDonald, 2011). For the purpose of this study, patient perception was defined as the psychological processing by which one interprets and understands available sensory information in an effort to establish an understanding of experience (McDonald, 2012); it was used as the conceptual underpinning for this study.

Comprehension of the patient's beliefs surrounding the following five components, which are all interconnected, is pivotal in understanding perception of illness. These five components are: identity, cause, consequences, cure control, and timeline. Identity refers to the symptoms associated with the condition and the label of the illness, cause refers to one's beliefs about the etiology of illness, consequences relate to the effects on one's daily life, cure control is concerned with how one can recover from or control the illness, and timeline depicts the anticipated duration (McDonald, 2012; Mikulak, 2012; Petrie & Weinman, 2012; Posey, 2006).

Antecedents are the factors that must occur prior to perception of illness being recognized (McDonald, 2012). The identified antecedents in relationship to patient perception of illness are: previous experiences, health beliefs, and health education. Previous experiences stem from the influence of social media, friends, family, and past situations to which one has been exposed. Health beliefs are the consideration of what health and illness means within one's life in the context of sociocultural values, and their viewpoints regarding illness severity, susceptibility, as well as barriers to and benefits from care. Health education is the information and teaching provided to a patient, regardless of the venue, ranging from elementary school, post secondary school training, information pamphlets and patient teaching, to name a few (Campbell, 1999; McDonald, 2012; Mikulak, 2012; Petrie & Weinman, 2012; Posey, 2006).

Consequences are what results from a patient's perception of illness (Mc Donald, 2011). The identified outcomes are health-seeking behaviors, decisions to utilize health care services, and analysis of the meaning of symptoms (Boradbent, Petrie, Main & Weinman, 2006). Health seeking behaviors are considered the actions that a patient takes to improve their health status, most often with a goal to attain a higher level of health and wellbeing (Campbell, 1999; McDonald, 2011; Posey, 2006; Wong et al., 2006). Meanwhile, analysis of the meaning of symptoms helps the patient to understand various aspects of their illness (Petrie & Weinman, 2012; Weinman, 2011). Ultimately, one's perception of illness guides their decision making process of whether they will seek medical attention or not (Callen et al., 2008; Campbell, 1999; Durand et al., 2012; Fry, 2009; Lega & Mengoni, 2008; Nelson, 2011; Posey, 2006; Wong et al., 2006). It is correlated to health outcomes such as functioning, treatment adherence, mortality, emotional distress, coping, recovery, disability, and health care service use (Mikulak, 2012; Petrie & Weinman, 2012; Wong et al., 2006).

Therefore, perception of illness is a contributing factor towards patients choosing to seek ED services for clinically non-urgent care needs (Lega & Mengoni, 2008). Thoroughly understanding ones perception of illness is valuable, as it allows health care providers to gain insight into the patient's health beliefs, health information synthesis patterns, and health related behaviours (Posey, 2006). It is interesting to note that 14% to 56% of patients presenting to the ED with non-urgent needs, as determined by triage staff, describe the reason for doing so was that they perceived emergent need (Benger & Jones, 2012; Graham et al., 2009; Wong et al., 2006). When comparing perception of urgency between the patient and care provider, 73% to 82% of patients who were deemed

non-urgent by the triage nurse perceived their needs as being serious (Callen et al., 2008; Gill et al., 1996).

Chapter 3

Methods

3.1 Research Design

A quantitative descriptive approach was implemented, utilizing a cross sectional design. This corresponds to level three evidence (Polit & Beck, 2012) and aims to describe relationships that naturally occur between variables. This approach enabled exploration of the relationships between identified variables.

3.2 Study Setting and Population

The target population was adult patients presenting to the ED at Health Sciences North with non-urgent care needs. Non-probability convenience sampling was used to recruit patients. The inclusion criteria were: 1) patients 18 years of age or older; 2) patients presenting to the ED at Health Sciences North; and 3) patients who have been assigned a CTAS IV or CTAS V. The exclusion criteria were patients who are unable to read and/or write in English.

Power analysis was completed with the G*Power 3 power analysis program (Faul, Erdfelder, Lang & Buchner, 2007), to ensure an adequate sample size was obtained. It was determined that 109 completed surveys would be required to promote statistical significance (Faul et al., 2007).

3.3 Participant Recruitment and Data Collection

Participant recruitment followed the patient intake protocol of the ED. Patients presenting to the Health Sciences North ED were assessed by the triage nurse to determine the urgency of care required and assign a CTAS score. After receiving a triage score, patients were registered to the department by a clerk. The registration clerks were

responsible for informing eligible patients about the study. To be eligible patients had to be 18 years of age or older, triaged with a CTAS IV or CTAS V, and able to read and write in English. The registration clerks invited eligible patients to participate in the study by following an established recruitment script (Appendix A). The registration clerks then provided patients who expressed interest in the study with a package as well as a clip-board and pen to facilitate completion of the questionnaire. This package contained the information letter and consent form (Appendix B), the self administered questionnaire (Appendix C), and the follow up contact card (Appendix D).

The survey was completed while the patient waited for assessment and/or care, either in the waiting room or treatment room. Once completed, the questionnaires were submitted to one of four locked boxes located in the ED. Three times a week the questionnaires were transferred from the locked boxes in the ED to a locked filing cabinet located at Laurentian University by the researcher. The survey was continuous from November 24, 2013 until December 27, 2013.

3.4 Data Collection Tools

Data collection occurred through the use of a self-administered questionnaire (Appendix C), which took approximately five minutes to complete. There were three parts to the questionnaire. The first part, demographic data, was obtained through questions relating to age, gender, and CTAS score. The third part of the questionnaire included the adapted Brief Illness Perception Questionnaire (Appendix C). The second part of the questionnaire included survey questions that provided data related to the research questions for this study. Information regarding the patient's access to primary health care within the community was obtained through a closed ended question relating

to whether or not they belong to a family practice where they have access to a family doctor or nurse practitioner. Furthermore, if they stated they were registered with a primary care provider, they were asked if they would have been able to see them for care on the day they presented to the ED for their health issue. Data about the patient's use of community based health care supports was obtained through two closed ended questions reflecting if they have health care services at home, and whether or not they attend programs or educational sessions about their health. Data was then collected with one open ended question exploring the factors that contributed to the patient's decision to present to the ED.

The survey questions in the second section of the questionnaire arose from the literature. For example, question six (Appendix C), exploring reasons why the patient chose to come to the ED for care, has been previously used in two peer reviewed quantitative studies (Field & Lantz, 2006; Steele et al., 2008). Content and face validity were achieved through a review of the questions by thesis committee members who have experience in primary health care and the ED. They ensured the fit of the questions with the healthcare environment in Sudbury, as well as the intended analysis. In addition, the researcher confirmed the content of the questions through discussion with four laypeople. Complexity and reading level of the wording of the questions was taken into consideration. The final self-administered questionnaire was short in length and was comprised of structured questions, contributing to simplicity for the patient when completing the survey, and facilitating data comparison and analysis between subjects (Polit & Beck, 2012).

Brief Illness Perception Questionnaire. Patient perception of illness was operationalized through the Brief Illness Perception Questionnaire (Appendix C), an eight-item tool using an 11-point Likert scale for response (0-10). This tool uses single item questions to capture the five interconnected dimensions of perception within the cognitive and emotional display of illness: identity, consequences, cause, timeline, and cure and/or control. These five components are essential for the person to make sense of their symptoms, assess their health risk and direct their decision making process and coping skills (Broadbent et al., 2006; Mc Donald, 2011; Mikulak, 2012; Petrie & Weinman, 2012; Posey, 2006).

The Brief Illness Perception Questionnaire creator explains: “In some circumstances it may be possible to compute an overall score which represents the degree to which the illness is perceived as threatening or benign... A higher score reflects a more threatening view of the illness” (Broadbent, n.d; pg. 1). Upon analysis of the questionnaire, a total score ranging from 8 to 88 was calculated (Broadbent et al., 2006). To promote clarity of discussion about a patient’s perceived threat of illness, the researcher categorized responses into three categories, as determined by the respondent’s total score for perception of illness. This was done by dividing the possible total score, 8 to 88, into equal thirds and assigning a low, moderate or high category to the total score. The three categories based on total score distribution are: low perceived threat of illness (total score 8-35), moderate perceived threat of illness (total score 36-61), and high perceived threat of illness (total score 62-88). Similar to the researchers categorization of total score for perceived threat of illness, a cross sectional design study by Var and Rajeswaran (2012) utilized the Brief Illness Perception Questionnaire and categorized

total scores into three similar categories: low, medium and high perceived threat of illness.

This measurement tool was appropriate for this study because it defines the concept of patient perception of illness. It also highlights a specific health issue, which aligns with the patient's health issue that was primarily responsible for their presentation to the ED. This tool is also shorter than the Revised Illness Perception Questionnaire, which is considered an advantage as it promotes feasibility of the study, speed of completion for the participants, and ease of interpretation of final scores (Broadbent et al., 2006). The causal question *'please list in rank-order the three most important factors that you believe caused your illness'* was omitted from the questionnaire in a effort to make the questionnaire shorter, and to promote simplicity for completion of the questionnaire by participants. Written approval (Appendix E) to utilize the Brief Illness Perception Questionnaire was obtained from Elizabeth Broadbent, the questionnaire creator, and she granted the researcher permission to alter the term illness to 'health issue', as health issue was more relevant to the study.

Psychometric testing of the Brief Illness Perception Questionnaire reveals it is a valid and reliable measure of perceived threat of illness in a variety of illness groups. Test-retest reliability of the Brief Illness Perception Questionnaire was assessed in patients with renal failure attending an outpatient clinic after three and six weeks. It demonstrated good test-retest reliability, as the Pearson r correlation value for items ranged from 0.42 to 0.73. This indicates a moderate to strong correlation, and also indicates that correlations were statistically significant. The Brief Illness Perception Questionnaire demonstrated good predictive validity in patients who were recovering

from a myocardial infarction. The discriminant validity of this questionnaire was supported by its ability to distinguish between five different illness groups (Broadbent et al., 2006). Although the Brief Illness Perception Questionnaire has not previously had psychometric testing done in reference to the topic of patient's perception of illness regarding the non-urgent use of the ED, it has previously been used in a study investigating the unscheduled use of emergency health care services (Lowe, Porter, Snooks, Button & Evans, 2011).

3.5 Ethical Considerations

The researcher met with the ED manager, who subsequently provided verbal and written support (Appendix F) on behalf of the ED for implementation of this research study at Health Sciences North. It was mutually agreed upon that data collection would preferably take place via the registration clerks in an effort to decrease researcher bias, decrease the coercion factor, and to facilitate consistent 24-hour data capture. Research ethics board approval was obtained from Laurentian University (Appendix G) and Health Sciences North (Appendix H).

Potential participants were made aware that participation in this study was voluntary and confidential, both in writing through the information letter and consent form, and verbally by the registration clerks. They were also notified that their choice to participate or not, would not influence the care they receive at Health Sciences North, and that they had the right to withdraw from the study at any time, without providing a reason for doing so. Written consent (Appendix B) was obtained from participants, and it was clearly noted on the information letter that study results may be published in an academic

journal or presented at an academic conference, for the purpose of dissemination of findings.

A contingency plan was established and approved for the researcher to recruit participants and distribute questionnaires. The registration clerks were aware that the contingency plan could be implemented at any time throughout the process, by informing the researcher of their request to have the contingency plan initiated. Ultimately no requests were received, and the contingency plan was not implemented.

Chapter 4

Findings

4.1 Response rate

During the course of data collection, November 24, 2013 to December 27, 2013, there were a total of 5,975 visits to the ED at Health Sciences North. Of these visits, 173 were assigned a CTAS V, and 972 were given a CTAS IV, ultimately accounting for 19.1% of all ED visits. It is unknown exactly how many patients were invited to participate in the study but declined. A total of 122 questionnaires were completed, three of which did not meet the inclusion criteria. They did not meet the inclusion criteria as one questionnaire was completed by a 15 year old, another questionnaire was completed by a 12 year old, and a father completed one questionnaire for his daughter, whose age was unknown. Therefore the total number of completed questionnaires that were analyzed was $n=119$, resulting in a 10.4% effective response rate.

4.2 Data Analysis

Questionnaire results were tabulated and entered into the Statistical Package for the Social Sciences Version 20. The researcher and thesis supervisor verified the data entry process. This was done by re-entering data from 10% of the completed questionnaires into the Statistical Package for the Social Sciences Version 20, and checking for accuracy. No discrepancies were found between the two sets of inputted data. Descriptive statistics were calculated from the data. Statistical significance was assessed at $p<0.05$.

4.3 Demographic Characteristics

Participants ranged in age from 18 years to 90 years, with a mean age of 40.7 years ($SD = 16.86$). Sixty five of the respondents (54.6%) were young adults, between 18 and 44 years of age. The gender distribution of participants was 44.5% ($n=53$) male, 52.1% ($n=62$) female, and four responses were missing (Table 1). All participants were assigned a triage level, 69.7% ($n=83$) were assigned a CTAS IV, 6.7% ($n=8$) were assigned a CTAS V, and 23.5% ($n=28$) of responses were missing (Table 1).

Data analysis proceeded despite 28 questionnaires missing a CTAS level because through discussion with the registration clerks, the researcher confirmed that they were aware only CTAS IV and CTAS V patients were to be invited to participate in the study. The registration clerks verbally explained to the researcher that they intermittently forgot to indicate the CTAS level on the questionnaires that were distributed due to their increased workload at times. The registration clerks were instructed to only invite patients to participate if they were assigned a CTAS IV or CTAS V. These instructions were provided verbally by the researcher, and through electronic mail from the ED manager. There was also an algorithm outlining the inclusion criteria, created and posted by the researcher, at each of the registration clerk cubicles. Furthermore, patients who have been triaged with a CTAS I are considered critical and proceed directly to a treatment room. The registration clerks register the patient to the department in the treatment room, and thus the patient does not visit the registration desk. Therefore, CTAS I patients would not have been invited to participate in the study. Finally, data analysis had to proceed despite this missing information because data collection had closed at the Health Sciences North

ED by the time the researcher realized the number of questionnaires with a missing CTAS level.

Table 1. Respondent gender, CTAS score, and age distribution

Characteristics	Percent
Gender (n=115)	96.6
Female (n=62)	52.1
Male (n=53)	44.5
Gender missing (n=4)	3.4
CTAS level (n=91)	76.5
CTAS IV (n=83)	69.7
CTAS V (n=8)	6.7
CTAS missing (n=28)	23.5
Age of participants (n=113)	95.0
18–24 years of age (n=22)	18.5
25–34 years of age (n=28)	23.5
35–44 years of age (n=15)	12.6
45–54 years of age (n=24)	20.2
55–64 years of age (n=15)	12.6
65–74 years of age (n=4)	3.4
75 years of age & older (n=5)	4.2
Age missing (n=6)	5.0

4.4 Access to a Primary Health Care Provider

Of the 115 participants who provided a response, 71.3% (n=82) indicated that they did have access to a primary care provider (Table 2). Of the respondents who indicated that they did have access to a primary care provider, 85.4% (n=70) stated that they would not have been able to see their practitioner for care on the day they presented to the ED at Health Sciences North, 7.3% (n=6) expressed that they would have been able to see their provider for care on that day, and 7.3% (n=6) reported that they did not know (Table 3).

Table 2. Respondent's access to primary care provider

Access to a Primary Care Provider	Percent
Yes (n=82)	71.3
No (n=33)	28.7
Missing (n=4)	3.4

Table 3. Availability of primary care provider on the day they presented to the ED

Availability of Care Provider Today	Percent
Access to a Primary Care Provider (n=82)	71.3
Yes (n=6)	7.3
No (n=70)	85.4
Did not know (n=6)	7.3

4.5 Community Based Health Care Supports

The majority of respondents (n=111; 93.3%) reported that they did not have any health care services at home. Of the four participants who indicated that they do receive health care services at home, two had home care, one was enrolled with the Assertive Community Treatment Team, and one participant did not specify the health care service.

Most of the participants (n=99; 83.2%) did not attend programs or educational sessions about their health. Of the 12 respondents (10.1%) who attend programs or educational sessions about their health, three indicated they attend diabetes education and care, one was a member of the virtual ward, two were enrolled in the mental health and addictions program, two attended the cancer clinic, one was enrolled in brain injury rehabilitation, and one attended outpatient physical rehabilitation. Interestingly, 6 of the 12 participants (50%) who did indicate they attend programs or educational sessions about their health were young adults, between 18 and 44 years of age.

4.6 Patient Perception of Illness

There were 97 respondents who completed the Brief Illness Perception Questionnaire. A total score was computed for each respondent, the lowest calculated score was 9, and the maximum score was 74. The mean total score was 45.67 ($SD = 13.44$). To promote clarity of discussion about perceived threat of illness, the researcher categorized responses into three categories, based on the respondent's total score for perception of illness. Table 4 outlines the total score distribution into three categories: low perceived threat of illness (total score 8-35), moderate perceived threat of illness (total score 36-61), and high perceived threat of illness (total score 62-88). As noted in Table 4, the majority of respondents ($n=68$; 70.1%) perceived the threat of their health issue that prompted them to seek care at the ED as moderate. Meanwhile 21.6% ($n=21$) perceived the threat as low, and 8.3% ($n=8$) of participants perceived the threat of their health issue as high (Table 4).

Table 4. Patient perception of illness total score distribution

Total Score	Frequency	Percent
8-35 Low Perceived Threat	21	21.6%
36-61 Moderate Perceived Threat	68	70.1%
62-88 High Perceived Threat	8	8.3%

Respondents who indicated that they did have access to a primary care provider perceived the threat of their health issue as less threatening, with an average total score of 43.46 ($SD = 14.15$), than those without access to a primary care provider who had a mean total score of 49.37 ($SD = 10.48$) (Table 5).

Table 5. Patient perception total score for patients with and without access to a primary care provider

	With a Primary Care Provider (n=82)	Without a Primary Care Provider (n=33)
Mean Total Score	43.46	49.37
Median Total Score	46.5	51.0
Standard Deviation	14.15	10.48

There were 82 patients registered with a primary care provider, and 33 respondents who did not have access to a primary care provider. The Shapiro-Wilk test was run to test for normality in patient perception total scores for participants with and without access to a primary care provider. Patient perception total scores were normally distributed for participants with access to a primary care provider ($p = .134$) (Figure 3), but were not normally distributed for patients without access to a family doctor and/or nurse practitioner (Figure 4), as assessed by Shapiro-Wilk's test ($p = .009$).

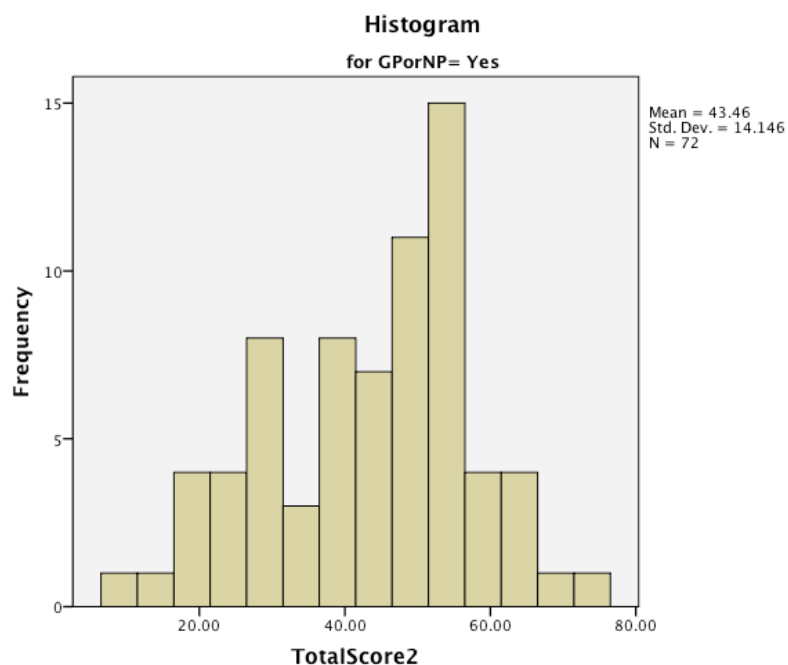


Figure 3. Patient perception of illness total score for respondents with access to a primary care provider. (Histogram adapted from SPSS Version 20, 2014)

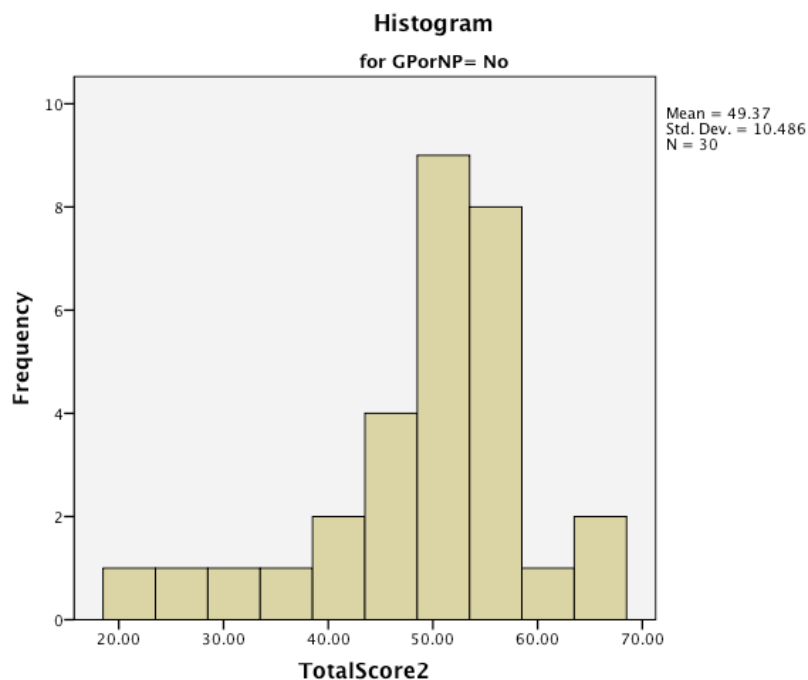


Figure 4. Patient perception of illness total score for respondents without access to a primary care provider. (Histogram adapted from SPSS Version 20, 2014)

After completing the Shapiro-Wilk test for normality, it was determined that non-parametric statistics would have to be used. A Mann-Whitney U test was run to determine if there were differences in patient perception total scores for patients with and without access to a primary care provider. Distributions of the patient perception total scores for patients with and without access to a primary care provider were not similar, as assessed by visual inspection. The patients without a primary care provider had a higher perceived threat of their health issue ($M = 49.37$, $SD = 10.48$), than those registered with a primary care provider ($M = 43.46$, $SD = 14.15$). Mean patient perception total scores were statistically significantly higher in patients without a primary care provider (49.37) than in patients who are registered with a primary care provider (43.46), $U = 1\,359.500$, $z = 2.054$, $p = 0.040$.

4.7 Reasons Why Patients Presented to the ED

A total of 113 participants provided a written response as to why they chose to present to the ED. Participant responses as to why they chose to present to the ED were coded into common themes and categorized into four factors: access, perceived urgency, perception of required services, and convenience (Elo & Kyngas, 2007). Content analysis was completed, and the responses that were categorized are outlined in Table 6.

Additional responses that were not categorized include that the patient was referred to the ED, they were not from this area and required health care, and those who stated they prefer the care at the ED (Table 6).

Table 6. Categorized responses to the reasons why patients presented to the ED

Access	<ul style="list-style-type: none"> - Do not have access to a family doctor or nurse practitioner - Family doctor and/or nurse practitioner office was closed - Walk in clinic was closed
Perceived Urgency	<ul style="list-style-type: none"> - Needed treatment as soon as possible - Could not wait for an appointment with my family doctor and/or nurse practitioner
Perception of Required Services	<ul style="list-style-type: none"> - The emergency department offers services that I thought I needed
Convenience	<ul style="list-style-type: none"> - The location of the emergency department was convenient
Other	<ul style="list-style-type: none"> - Referred to the emergency department - I am not from this area and I needed health care - Prefer the care at the emergency department

A total of 224 responses were received, from 113 participants, as many selected more than one reason for presenting to the ED. The majority of respondents, 72.6% (n=82) indicated one of the reasons why they chose to come to the ED was a perceived urgent need for care, 34.5% (n=39) selected access, 9.7% (n=11) reported convenience, and 48.7% (n=55) identified that they thought they required ED services (Table 7). Furthermore, 12.4% (n=14) of respondents indicated that they had been referred to the ED, 7.1% (n=8) expressed that they were not from this area and needed health care, and 2.7% (n=3) identified that they prefer the care at the ED (Table 7).

Table 7. Reasons why patients presented to the ED (n=113; 224 total responses)

Reasons for presenting to the ED (224 total responses)	Percent
Access (n=39)	34.5
Perceived Urgency (n=82)	72.6
Perception of Required Services (n=55)	48.7
Convenience (n=11)	9.7
Referral to the ED (n=14)	12.4
Not from the area (n=8)	7.1
Prefer the care at the ED (n=3)	2.7
Other (n=12)	10.6
Missing (n=6)	5.0

Specifically, the frequency of response to individual questions that were categorized into access and perceived urgency can be found in Table 8. Within the category of access to available services, 43.6% (n=17) indicated that they did not have access to a family doctor and/or nurse practitioner, 35.9% (n=14) reported that their family doctor and/or nurse practitioner's office was closed, and 20.5% (n=8) expressed that the walk in clinic was closed. Of the 82 respondents who identified perceived urgency as the reason for presenting to the ED, 69.5% (n=57) reported that they needed treatment as soon as possible, and 30.5% (n=25) expressed that they could not wait for an appointment with their family doctor and/or nurse practitioner (Table 8.).

Table 8. Individual response analysis for access and perceived urgency

Individual Questions	n=	Percent
Access		
-Do not have access to family doctor and/or nurse practitioner	17	43.6
-Family doctor and/or nurse practitioner office was closed	14	35.9
-Walk in clinic was closed	8	20.5
Perceived Urgency		
-Needed treatment as soon as possible	57	69.5
-Could not wait for an appointment with my family doctor and/or nurse practitioner	25	30.5

Of the 55 respondents who indicated they came to the ED because they thought they required ED services, a majority (n=31, 56.4%) indicated they thought they needed an x-ray. Additionally, 5.5% (n=3) expected to require intravenous medications, 10.9% (n=6) anticipated needing sutures, 10.9% (n=6) of respondents were expecting to require a cast, 12.7% (n=7) anticipated needing blood work, and 7.3% (n=4) an ultrasound (Table 9). Meanwhile, one person explained that they thought they may need an MRI, and 12.7% (n=7) did not specify what ED service they thought they would require, as

represented in Table 9. Specifically, within the young adult demographic (18 to 44 years), of those who indicated they choose to come to the ED because they thought they required ED services, a majority (n=17, 68%) explained that they anticipated needing an x-ray.

Table 9. Specification of respondents perceived service requirement at the ED

Perceived Service Requirement	Percent
Intravenous medications (n=3)	5.5
X-ray (n=31)	56.4
Sutures (n=6)	10.9
Casting (n=6)	10.9
Blood work (n=7)	12.7
Ultrasound (n=4)	7.3
MRI (n=1)	1.8
Not specified (n=7)	12.7

Twelve respondents (10.6%) selected the option ‘other, please explain:’ on the questionnaire as their reason why they chose to come to the ED for their health concern.

Chapter 5

Discussion

The objective of this research paper was to determine the relationship between having a primary health care provider, utilizing community based health care supports, and the patient's perception of illness with presentation to the ED for non-urgent care needs. The findings from this study are presented below, as they relate to the identified objectives.

5.1 Response Rate

It is unknown exactly how many patients were invited to participate in the study by the registration clerks but declined. The number of patients who presented to the ED and were assigned a CTAS IV or CTAS V, who were under the age of 18 years, or were unable to read and write in English, thus did not meet the inclusion criteria, is also unknown. Therefore the effective response rate, as calculated with the available data, was 10.4%. This effective response rate is low in comparison to other cross sectional self-administered questionnaires distributed to CTAS IV and CTAS V in Canada, as evidenced by Field and Lantz (2006) who reported a 66.7% response rate, Han et al. (2007) who identified a 64.4% response rate, and Steele et al. (2008) who reported a 97.2% response rate. Potential reasons for the low response rate could include the fact that perhaps not all eligible patients were invited by the registration clerks to participate in the study, and patients may have agreed to participate, but subsequently did not fill out and submit their questionnaire for analysis. Patients may have also declined to participate because they were feeling unwell, or did not want to participate in a research study.

5.2 The General System Theory

Von Bertalanffy's (1950) General System Theory served as the guiding theoretical framework for this study. This theory recognizes that large suprasystems are comprised of various systems and subsystems that interact with each other to establish a meaningful and integrative whole (Boettcher, 1996). All systems are comprised of the same elements: input, output, throughput, feedback, control, environment, and goals (Founds, 2009; Gillies, 1982). In reference to this research study the suprasystem under investigation was health care delivery within the City of Greater Sudbury, with specific attention to the health care delivery system at Health Sciences North. The subsystem that was focused on for the purpose of this study was the ED at Health Sciences North.

Information obtained from the study's self administered questionnaires provided *input*, regarding the *stressor* currently affecting the Health Sciences North ED, which is the non-urgent use of it's services by patients whose needs could have been with primary health care in the community. The results of this questionnaire conveyed *feedback* to the researcher, which in turn can promote change and adaptation to achieve system goals. Ultimately this feedback can assist health care providers, planners and decision makers to promote positive change for the delivery of primary health care services within the community, as well as patient's awareness of the services available and accessible to them (Christensen & Kenney, 1995; Hronek & Bleich, 2002; Kast & Rosenzweig, 1981).

When patients have regular access to primary health care and they perceive an ability to readily access primary care, ED utilization is reduced (Roberge, Larouche, Pineault, Levesque, Hamel & Simard, 2007). Specifically, it is important to understand the relationship between available and accessible primary health care in a community,

with the use of the ED for non-urgent care needs. Contributing factors to the use of the ED for non-urgent care needs are often associated with barriers regarding the availability of and accessibility to primary health care providers (Durand et al., 2012; Lega & Mengoni, 2008). Reasons include limited office hours, availability of walk in clinics and after hours clinics, long wait times, inability to book same day or next day appointments, and/or an inadequate number of providers servicing an area (Field & Lantz, 2006; Steele et al., 2008). This is a reality within the City of Greater Sudbury, as 11.4% of adult citizens are without a primary health care provider, and only 37.6% of adult residents with a primary health care provider are able to see their provider on the same day or next day when they are sick (MOHLTC, 2014b).

5.3 Community Based Health Care Services

A majority of respondents indicated that they did not have any health care services at home, nor did they attend programs or educational sessions about their health. This may suggest that patients who utilize home care and/or community based health care supports present less frequently to the ED with non-urgent health care needs. When they do present to the ED, it may be for more urgent health care needs. This is supported by the fact that continuity of care has been associated, at an individual level, with greater patient satisfaction, improved health outcomes, and increased adherence to treatment plans. Meanwhile from a systems perspective it has been associated with a decreased use of the ED and lower health care costs (Kristjansson et al., 2013). Ultimately, patients with a primary care provider and/or high degree of continuity of care present less frequently to the ED with non-urgent care needs, than patients who have a lower degree of continuity of care (Kristjansson et al., 2013). Participation in community based primary health care

supports can result in lower rates of ED visits, enhance accessibility to health care services, and promote management of chronic illnesses (Choudhry et al., 2007; Roberge et al., 2010), therefore at a systems level, lowering the costs of health care delivery.

Interestingly, the mean age of participants was 40.7 years, and 54.6% of respondents were between the age of 18 and 44 years; therefore a majority of participants were young adults. This finding is similar to what is found in the literature, as noted within Afilao et al.'s (2004) secondary analysis of a cross-sectional study where the mean age of patients presenting to the ED with non-urgent care needs was 43 years, and within Nelson's descriptive exploratory study (2011), where the majority of non-urgent ED users were under the age of 40. According to Bengner and Jones (2012) and Roberge et al. (2007), younger adults tend to present more frequently to the ED, and use a limited number of community based health care supports, due to the decreased prevalence of chronic disease in this demographic. In relationship to this study, the age of participants may explain why the majority of respondents did not have any health care services at home, nor did they use community based health care supports. Within the young adult demographic, 9.2% (n=6) attended programs or educational sessions about their health. Specifically, the services they utilized were diabetes education and care, brain injury rehabilitation, and the mental health and addictions program.

There were not enough responses indicating the use of community based health care supports and/or the use of home care for analysis. Therefore, it was not possible to identify any significant relationships with these variables in relationship to the patient's decision to seek care at the ED for non-urgent care needs.

5.4 Access to Primary Health Care

Only 71.3% (n=82) of respondents reported having access to a primary health care provider. Specifically, 69.2% (n=45) of the young adults within this study were registered with a primary care provider. This is in contrast to the 89.3% of people within the North Eastern LHIN who are attached to a primary care provider (MOHLTC, 2014b). It has been previously identified that patients without a primary care provider are 3.5 times more likely to utilize ED services (Han et al., 2007). The low percentage of participants in this study registered to a primary health care provider suggests that the reason patients may be attending the ED for non-urgent care needs might be related to a shortage of, or lack of access to primary care providers within the suprasystem of health care delivery in the City of Greater Sudbury.

As noted by Afilalo et al. (2004), the use of the ED for non-urgent care needs is often related to barriers in seeking primary health care services within a community. This is recognized based on patient's expressed reasons for presenting to the ED such as limited accessibility to primary care, and frequent referral to the ED by healthcare providers within the community. Within the literature it is noted that 11% to 20% of patients presenting to the ED with non-urgent care needs have come to the ED because they were referred there by another health care provider and/or agency (Afilalo et al., 2004; Howard et al., 2005; Lega & Mengoni, 2008; Callen et al., 2008). In relationship to the General System Theory, this supports the link that exists between the system encompassing primary health care services, such as walk in clinics, family health teams, and after hours clinics, with the system represented by acute care service provision at Health Sciences North, specifically their subsystem of care delivery through the ED.

Of the participants who expressed registration with a primary care provider, 85.4% (n=70) indicated that they would not have been able to see their health care provider for care on the day they presented to the ED. Reflecting on this finding, 62.4% of adult Sudbury residents are unable to see their primary care provider on the same day or next day when they are sick, in contrast to the 55% of adult residents within the province of Ontario who are unable to see their provider on the same day or next day (MOHLTC, 2014b). It is reported that 47% of Canadians have sought care at the ED for a primary health care concern that could have been treated by their primary care provider, if they had been available (Health Council of Canada, 2014). Lack of timely access to primary health care providers may have influenced the participants in this study to access services within the ED.

Factors influencing patient's access to their primary care provider are varied. For example, the clinic may have been closed once they got off work, and/or the location of the ED was more convenient. In addition, a portion of the timeframe of data collection in this study occurred over the Christmas holidays, which may have contributed to patient use of the ED. The Health Council of Canada (2014) identified that 62% of Canadians report difficulty accessing medical care on the weekends, in the evenings, and on holidays other than at the ED. Cheung et al. (2011) and Wilkin et al. (2012) also support these aforementioned predictions, as they report factors that may deter a patient from seeking care with their primary health care provider include a lack of transportation, inability to take time off from work, competing time demands, inconvenient office hours, and long wait times.

It is known that Canadians residing in rural and northern communities have decreased continuity of care when compared to their urban counterparts. This lack of care continuity can be associated with increased non-urgent ED visits and increased costs of health care delivery (Kristjansson et al., 2013). From a systems perspective, this places increased stress on the local EDs, as a subsystem of health care delivery within a community. Mian and Pong (2012), through their population-based telephone survey, found that Ontario residents living in rural and northern communities were 63% more likely to visit the ED than people living in urban communities. This finding is linked to the decreased accessibility to primary health care in rural and northern areas, and the limited availability of community based health care supports (Mian & Pong, 2012). The northern and urban location of the Sudbury ED, and the availability of health care resources, or lack thereof in the area, may have contributed to the decision of participants to attend the ED.

5.5 Patient Perception of Illness

Patient perception is a subjective phenomenon originating from one's emotional and cognitive processing of sensory information, influenced by various sociocultural factors and impacted by one's previous experiences (Jayne & Rankin, 2001; Posey, 2006). Ultimately, perception of illness guides a patient's decision-making process and their decision to utilize health care services (Callen et al., 2008; Durand et al., 2012; Fry, 2009; Nelson, 2011; Posey, 2006). As noted within the literature, it is an important indicator for non-urgent use of the ED (Lega & Mengoni, 2008), therefore an important concept to understand when analyzing the use of ED services. In an effort to promote ease of discussion, for the purpose of this study, the researcher categorized responses for patient

perception of illness into the following three categories: low perceived threat of illness (total score range 8-35), moderate perceived threat of illness (total score range 36-61), and high perceived threat of illness (total score range 62-88). This technique was used by Var and Rajeswaran (2012) in their cross sectional design study that utilized the Brief Illness Perception Questionnaire.

Findings from this study indicate that the majority of respondents (n=68, 70.1%) perceived the threat of their illness as moderate, and only 8.3% (n=8) perceived the threat of their health issue as high. In contrast to this, 72.6% (n=82) of participants expressed that they presented to the ED because they perceived the need for care for their health issue as urgent. Despite this available data, no significant relationships were identified between respondent's total score for perception of illness and the reasons provided as to why they chose to seek care at the ED.

This prompts the question that if the majority of patients perceived only a moderate threat of illness, why have they presented to the ED to seek healthcare services? Potentially these patients, with a perceived moderate threat of illness, have presented for other reasons, such as convenience, referral, accessibility, or a preference for ED care. However, alternatively the majority of respondents did indicate that they presented to the ED because they perceived their need for care as urgent. This finding is similar to Baker, Stevens and Brook's (1995) cross sectional design study. They reported that 77% of patient's who recognized their health issue as not serious, explained they perceived an urgent need for ED care. They further explained that patients have a tendency to overestimate their need for urgent care based on an independent assessment of the severity of their condition, even when they describe their health issue as not serious

(Baker et al., 1995). This may suggest that patients are conducting two independent assessments of their health care needs. The first being an overall sense of the perceived need for care, and the second being a more stepwise assessment of the symptoms they are experiencing, the services locally available and accessible to them, and the self assessed complexity of the health issue (Siminski et al., 2008).

Patients who reported having access to a primary care provider, either a family physician or nurse practitioner, were found to have significantly lower perceived threat of illness than those without access to a primary care provider. In contrast, patients without access to a primary care provider perceived the threat of their health issue as more threatening than patients with a primary care provider. This may suggest that despite being registered with a primary care provider, patients may have been unable to secure a timely appointment with their provider, and/or had a high perceived need for specific ED services, leading to their decision to go to the ED. Similarly, Afilalo et al. (2004) determined that common reasons provided by patients as to why they seek care at the ED rather than with their primary health care provider include a lack of timely accessibility to care, and a perceived urgent need for care. In addition, when patients experience enhanced continuity of care with their primary health care provider, they are less likely to visit the ED (McCusker et al., 2010).

The aforementioned finding suggests a need for increased awareness about the intended purpose of Canadian EDs, as well as the development of educational campaigns to inform people about what constitutes an emergency, and the health care options that are accessible and available to them. Enhanced education has the potential to influence a patient's perception of illness, because health education is one of the three antecedents to

perception of illness. Health education is recognized as the information that is provided to a patient to improve their level of health, regardless of the avenue, ranging from formal school training, information pamphlets, advertisements, and patient teaching (Campbell, 1999; McDonald, 2011; Mikulak, 2012; Petrie & Weinman, 2012; Posey, 2006).

Therefore, the researcher is hopeful that educational initiatives would provide patients with the information they need to accurately assess their health issue, ultimately determine their perceived level of urgency in relationship to this health issue, and subsequently decide what health care service, that is available and accessible to them, best meets their needs.

In support of enhancing health literacy, Schumacher et al. (2013) reported that patients with a limited health literacy rate are less likely to visit a primary health care provider, and are more likely to utilize ED services. This may be because patients with limited health literacy are unaware of the healthcare services that are locally available and accessible, and thus have a tendency to present to the ED. However, this finding may also be related to the fact that patients with a limited health literacy have a decreased capacity to assess the symptoms associated with their health issue, determine their perceived threat of illness, and ultimately decide which services to access. This prediction recognizes that perceived level of urgency and perceived accessibility are both influenced by health education, and both influence a patient's decision to present to the ED, despite representing two distinct concepts. In relationship to this, Fieldston et al. (2012) explain that patients are often unable to distinguish the difference between urgent and non-urgent care needs. Furthermore, patients tend to have an enhanced desire to receive timely

reassurance about their medical condition, and thus will choose to present to the ED rather than wait for a primary care appointment.

5.6 Factors Related to Non-Urgent Emergency Department Visits

It is important to understand the reasons why patients present to the ED with non-urgent care needs. The factors arising from the content analysis of the written responses of participants as to why they went to the ED compare to those commonly cited within the literature for patients to present to an ED with non-urgent care needs (Afilalo et al., 2004; Bengner & Jones, 2008; Field & Lantz, 2006; Han et al., 2007; Howard et al., 2005; Lega & Mengoni, 2008; Wong et al., 2006). These factors are perceived urgency, perception of required services, convenience, and access.

Perceived urgency. Perception of illness is associated with four health outcomes: emotional distress, recovery and disability, survival, and treatment related behaviours. Specifically, it can influence a patient's level of functioning, health care service utilization patterns, treatment adherence, and mortality rate (Petrie & Weinman, 2012; Mikulak, 2012). Findings suggest that a majority (n=82, 72.6%) of participants presented to the ED because they perceived the need for care for their health issue as urgent. This is supported by previous research, as upwards to 56% of patients present to the ED with non-urgent needs because they perceived an emergent need for care (Bengner & Jones, 2008; Graham et al., 2009; Wong et al., 2006). However, despite participants indicating that they chose to seek care at the ED because they perceived a need for urgent care, a majority of participants perceived the threat of their health issue as moderate, and only 8.3% of respondents perceived the threat of their health issue as high. Public programs to increase awareness regarding what constitutes an emergency are warranted, as is the need

for further research into patient perceptions of illness, specifically in relationship to their reason for presenting to the ED with non-urgent care needs.

Perception of required services. A total of 48.7% (n=55) of respondents explained that they chose to come to the ED because they felt they required specific ED services, of which 56.4% (n=31) expressed that they felt they needed an x-ray, 12.7% (n=7) blood-work, 10.9% (n=6) sutures, and 10.9% (n=6) a cast. These findings suggest that there may be a need for radiology, suturing, and casting services within the community, at a location other than the ED. Potential avenues to provide these services may include an urgent care centre, establishing radiology capabilities at existing local laboratories or walk in clinics, or the establishment of fracture clinics.

Within Ontario there are 35 fracture clinics, none of which are located within the City of Greater Sudbury (The International Society for Fracture Repair, 2014). These fracture clinics are often situated close to the ED, within a hospital, as an outpatient program (St. Joseph's Health Centre, 2013). Patients are referred to the fracture clinic most commonly through the ED, primary health care providers, walk in clinics, or an orthopaedic surgeon. Common reasons for referral include the evidence and/or suspicion of acute injury, ligament injury, inflammatory joint issues, soft tissue injury, or fractures (St. Joseph's Health Centre, 2013). Services commonly offered through the clinic include x-ray, casting, post operative orthopedic surgery follow up, and consultations with an orthopaedic technologist, orthopaedic surgeon, physiotherapist, and/or occupational therapist (Southlake Regional Health Centre, 2012). The creation of a fracture clinic within the City of Greater Sudbury may divert a portion of the non-urgent ED cases, thus from a systems perspective reducing the workload in the ED and providing more efficient

and potentially more cost effective care for musculoskeletal issues. Ultimately, at an individual level, this would also enhance the quality and timeliness of care delivery for those seeking care for musculoskeletal concerns.

Limited research was available regarding the impact that the implementation of a fracture clinic has on ED use, as well as wait times at the ED, and patient flow through the department. However, a study by Dale, Green, Reid and Glucksman (1995) found that 19.8% of non-urgent care visits to an ED were due to lacerations or abrasions, and 7.8% were for fractures or dislocations. Of the patients with a laceration or abrasion, 17% required suturing, 23% required steri-strips or glue, and 38% needed a dressing. This study also reported that 3.1% of non-urgent visits to the ED resulted in a referral to the local fracture clinic (Dale et al., 1995).

Accessibility and convenience. Accessibility was cited as the reason for presentation at the ED for 34.5% of participants. The issue of accessibility has been discussed. An additional 9.7% of respondents reported that they came to the ED for non-urgent care needs because it was convenient. This is consistent with the literature as availability of health care resources and organizations is one of the three factors known to influence an individual's choice of seeking health care services (Newcomb, 2005). At an individual level this supports the need for enhanced educational awareness regarding available care options, but also how to evaluate your symptoms and identify if they may potentially represent an emergency (Wilkin et al., 2012). At the suprasystem level this supports the development of educational campaigns to disseminate information regarding available and appropriate care options within the City of Greater Sudbury.

5.7 Health System Effects

It is worthwhile to note that when attempts are made to improve ED wait times, the morale of the staff is enhanced (Mortimore & Cooper, 2007). With respect to the General System Theory, at the suprasystem level of health care delivery in Sudbury, the use of the ED for non-urgent care needs increases the overall cost of health care delivery, and at the subsystem level of the ED, increases workload and diverts resources from potentially life-threatening conditions within the ED. Meanwhile, at the individual level of the patient, non-urgent ED use contributes to a lack of follow up and continuity of care (Sempere-Selva et al., 2001). Ultimately, ED utilization trends serve as a way to monitor how effectively a local health care system is working (Roberge et al., 2007).

In 2013, Ontario EDs were host to 5,207,064 patient visits, 34.6% of which were for less-urgent or non-urgent care needs (MOHLTC, 2014). An overcrowded environment can prompt burnout for ED nurses, as they struggle to provide high quality care to patients despite overwhelming workloads. Increasing workloads subsequently affects patient safety, as well as staff recruitment and retention (Lyneham, Cloughessy & Martin, 2008). This is supported by the fact that ED nurses at Health Sciences North expressed concern regarding patient safety, increasing workload, and the quality of care provided (Martin, 2012). Nurses recognize their workload is increasing, all the while striving to maintain safe and quality care provision. Additional stressors experienced by ED nurses include conflict with colleagues, lack of social support, lack of resources, and dealing with death and suffering of patients. These stressors can lead to burnout for frontline ED nurses, which can be associated with decreased physical and psychological wellbeing of the nurse, as well as systematic stressors such as increased absenteeism and

staff turnout, and decreased productivity (Garcia-Izquierdo & Rios-Risquez, 2012; Hooper et al., 2012).

With reference to the General System Theory, the feedback obtained from this study, through the analysis of the input gained from the self administered questionnaires, can help policy makers, planners, and health care providers to promote positive change within the suprasystem of health care delivery in the City of Greater Sudbury. Avenues for potential change include the development of educational awareness campaigns, and the implementation of urgent care centres and/or fracture clinics.

5.8 Implications for Practice

Medically non-urgent visits to the ED are costly due to the corresponding inefficient use of resources and additional workload they create for nurses (Baldursdottir et al., 2002; Field & Lantz, 2006; Siminski et al., 2008; Tsai et al., 2011). The researcher is hopeful that results of this study will inform planners, decision makers and health care professionals, at the bedside, in the community and in management positions about the factors that influence a patient's decision to seek care at the ED for non-urgent needs. These factors include limited access to primary health care providers, a perceived urgency of need for care, a perceived need for specific ED services such as x-ray, casting, and suturing, as well as the attraction to the convenience of care delivered within the ED.

Part of a systems approach to the issues identified within this study is to enhance coordination across the health care system. Such as integration of Health Quality Ontario's (2013) improvement strategy to encourage the implementation of Advanced Access Scheduling, that will promote more same day appointments with primary health care providers. This would enhance patient's access to primary health care. Another

avenue for enhanced collaboration within the suprasystem of health care delivery could be with local Community Care Access Centres. Through coordination and collaboration with local Community Care Access Centres, access to and diversity of available community based health care supports could be enhanced.

Patient awareness and comprehension of the most appropriate services related to their health care concern should also be addressed. Potential implications from this study may be the development of educational programs and initiatives to increase public awareness of services available to them such as after-hours clinics, walk in clinics, and nurse practitioners (Durand et al., 2012; Sanders, 2000). These educational programs could be developed and delivered in collaboration with the MOHLTC, Public Health Units, Family Health Teams, primary care offices, as well as hospital organizations.

Educational campaigns could also target health care providers working within primary health care, to enhance their understanding of care options available and accessible to patients, and the importance of careful clinical assessment and analysis of treatment options before referring patients to the ED. It may also be valuable to promote clear communication between primary health care agencies and/or providers, with their clients, regarding available and accessible health care options for registered patients after hours (evenings, weekends and holidays), in addition to service availability when health care is needed on the same day or next day. This targeted educational campaign could be beneficial because when patients perceive they can access primary care promptly ED usage is considerably reduced (Roberge et al., 2007).

Results from this study may also prompt the development of programs and initiatives to help guide the provision of primary health care, and enhance accessibility to

primary health care services. In particular, the development of new programs such as an urgent care centre, minor injury unit, or fracture clinic within the community may be considered. With the support of local stakeholders and decision makers, the establishment of these programs would enhance the accessibility to primary health care services, radiology services, as well as the application of sutures and casts, thus safely diverting a proportion of ED visits.

Additional strategies to redirect patients with non-urgent care needs who present to the ED are noted in the literature. These include hiring gatekeepers at the ED, and allowing ED triage staff to refer the patient to alternative health care services or organizations. Additional approaches include enabling paramedics to engage in 'see and treat' protocol within the community, and considering financial penalties for patients presenting to the ED with non-urgent needs (Durand et al., 2012; Fry, 2009; Gill, 1994).

5.9 Implications for Future Research

It would be beneficial for future research to investigate the use of home care and/or community based health care supports for patients with non-urgent care needs who present to the ED, and any potential relationships that may exist between their reason for coming to the ED for care, and the health issue that prompted their visit. Additional research should be done in respect to the influence that an urgent care centre and/or fracture clinic would have on an urban northern Ontario community in relationship to the frequency of non-urgent visits to the ED, and the reasons identified by patients for presenting to the ED. Future research could also focus on the impact that educational awareness campaigns which target providers as well as patients, regarding what

constitutes an emergency, and the services that are locally available and accessible, has on the use of the ED for non-urgent care needs.

5.10 Limitations

It is important to recognize the limitations of this study. A potential threat to statistical conclusion validity is due to convenience sampling, as it may not have been representative of the target population. Therefore, one must be cautious about any inferences made and interpretations of generalizability. Data was only collected during one period of time, thus contributing to potential threats to statistical conclusion validity (Polit & Beck, 2012).

An additional potential limitation to the generalizability of study findings is the time period at which data collection occurred. Participants were recruited between November 24, 2013 and December 27, 2013, therefore, in part, over the Christmas holiday season. This may have affected the availability of alternative health care options, due to potentially restricted holiday hours and scheduling, therefore prompting an ED visit. Participants may have also had an enhanced desire to address their health care needs promptly, due to the holiday season, thus contributing to the reason why patients sought care/services at the ED rather than primary care within the community.

Another sampling limitation was the exclusion of non-English speaking patients, as it potentially limited the generalizability of data and threatened the representativeness of the sample. Despite these factors, it needed to remain in the exclusion criteria to ensure feasibility of the study, and because the Brief Illness Perception Questionnaire has only been validated in English, not French. Although it has demonstrated reliability and

validity with a range of chronic diseases, the Brief Illness Perception Questionnaire has not been validated for the target population identified in this study.

Conclusion

Non-urgent ED visits in Canada contribute to overburdened facilities, increased costs, workload and wait times, as well as potentially poorer outcomes for patients requiring urgent care (Durand et al., 2012; Hodgins & Wuest, 2007; Ross-Adjie et al., 2007; Tsai et al., 2011). This is evident at Health Sciences North, as ED nurses expressed concern regarding patient safety, increasing workload, and the quality of care provided to patients in 2012 during a peer review of the hospital (Martin, 2012), as part of a quality improvement initiative.

Findings from this study indicate that a majority of patients presenting to the ED at Health Sciences North with non-urgent care needs were registered with a primary care provider, of which 85.4% of respondents expressed that they would not have been able to see them for care on the day they presented. Patients who did not have a primary care provider had a significantly higher perceived threat of illness than those with a primary care provider. Overall, 70.1% of participants perceived the threat of their health issue as moderate. Reasons most commonly provided by the respondents as to why they chose to come to the ED for care included a perceived urgent need for care, accessibility, convenience, and a perceived need for specific ED services; all of which are previously supported in academic literature (Afilalo et al., 2004; Bengner & Jones, 2012; Field & Lantz, 2006; Graham et al., 2009; Guttman et al., 2003; Sempere-Selva et al., 2001; Siminski et al., 2008; Steele et al., 2008; Tsai et al., 2011; Wong et al., 2006).

Particularly, patients most commonly predicted a need for an x-ray, sutures, cast, and/or blood-work.

The non-urgent use of EDs is ultimately a reflection of three things: how to appropriately manage the presenting health issue, the patient's understanding of their health issue and related care needs, and the services that are locally available and accessible to the patient (Bezzina et al., 2005). Identifying why people present to the ED with non-urgent care needs can assist health care providers, planners, and decision makers to enhance their understanding of the patient's expectations of health care services, patient perception of illness, and the logistical difficulties associated with the delivery of primary health care services (Siminski et al., 2008). From a systems perspective, results of this study may prompt the development of an urgent care centre and/or fracture clinic in the City of Greater Sudbury. Findings may also promote the creation of educational campaigns to increase the public's awareness of what constitutes an emergency, as well as the availability and accessibility of primary health care services within their community.

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Appendices

Appendix A

Verbal Recruitment Script for Potential Participants

- If the patient is 18 years of age or older, able to read and write in English, and has been triaged with a Canadian Triage and Acuity Scale score of 4 or 5, proceed to say the following:

“You are invited to participate in a research study that is being conducted in the emergency department at Health Sciences North. This study is being conducted by a student in the Master’s of Nursing program at Laurentian University. Participation in the project is voluntary, and would involve the completion of a questionnaire that will take approximately 5 minutes of your time. Your decision to participate in this study will not influence the care you will receive at Health Sciences North today or in the future. If you chose to participate, you are free to withdraw from the study at any time without penalty.”

- If the patient seems interested, or not, proceed to the following statement:

“Would you like to have more information about the study?”

- If yes: “Thank you.” And provide patient with study information package
- If no: “Thank you.”



Appendix B



Information for Potential Study Participants

Study Title: Factors contributing to the use of the emergency department by Canadian Triage and Acuity Scale 4 and 5 patients.

Purpose of the study: You are invited to take part in this study that is looking at why people choose to attend the emergency department at Health Sciences North. From the results of this study we hope to understand the reasons why people come to the emergency department and look for ways to improve access to health care.

Benefits and Risks: There are no known benefits for the people who participate in this study. There are no known risks linked to this study. We do not know how you will react to the survey questions. You have the right to refuse to answer any of the questions. If a question makes you feel uncomfortable, we encourage you to contact the researchers.

Participation in this study is voluntary: You do not have to take part in this study. Your choice to participate or not participate in this study will not influence the care you will receive at Health Sciences North today, or any time in the future. You may drop out of this study at any time without giving a reason and without penalty.

Tasks involved in this study: If you choose to participate in this study please fill out the survey that is in this package, and sign your initials on the consent form that can be found on page 2. The survey will take about 5 minutes to finish. You can complete the questionnaire while you are waiting for care and/or assessment. Once you are finished the survey, please drop it into one of the two locked boxes in the emergency department. There is a basket beside each of the locked boxes, please drop the clipboard and pen that were given to you into one of these baskets.

Confidentiality: Your name, or any information that would allow you to be identified will not be recorded for this study. Your medical records will **NOT** be used for this study. Results of this study will be presented in a way that protects the identity of participants. The staff at Health Sciences North will not know who has participated, or not participated in the study. Consent forms and surveys will not be stored together, so they cannot be linked to one another. Data will be kept until the end of the research study in a locked filing cabinet at Laurentian University. Data will then be destroyed.

Contacts: If you have any questions about your rights as a research participant or the conduct of the study you may contact the student researcher Christine Askin (cx_askin@laurentian.ca), faculty supervisor Roberta Heale (rheale@laurentian.ca; 705-675-1151 ext. 3971; 1-800-461-4030), a Laurentian University Research Ethics Officer, who has no attachment to the research team (705-675-1151 ext. 2436; 1-800-461-4030; ethics@laurentian.ca), or the Health Sciences North Research Ethics Board (705-523-7100 ext. 2409; reb@hsnsudbury.ca). The Health Sciences North Research Ethics Board is a group of people who oversee the ethical conduct of research studies. These people are not part of the study team. Everything that you discuss will be kept confidential.

Ethical approval has been obtained from Laurentian University and Health Sciences North

Please keep this information sheet for your records.



Health Sciences North
Horizon Santé-Nord



Laurentian University
Université Laurentienne

Consent Form

I have read the information about the study being conducted by Christine Askin, a graduate nursing student at Laurentian University, as part of her graduate thesis.

I understand that my participation in this study is voluntary and confidential. If I agree to participate in this study, I may withdraw from the study at any time. I have the right to refuse to answer any question.

I understand that by agreeing to participate or not participate in this study, the care that I will receive today and in the future at Health Sciences North will **not** be affected.

I am aware that if I have any questions regarding my participation in this project I can contact Christine Askin (cx_askin@laurentian.ca), Roberta Heale (rheale@laurentian.ca; 705-675-1151 extension 3971; 1-800-461-4030), a Laurentian University Research Ethics Officer (705-675-1151 extension 2436; 1-800-461-4030; ethics@laurentian.ca), or the Health Sciences North Research Ethics Board (705-523-7100 extension 2409; reb@hsnsudbury.ca).

I would like to receive a summary of the study results: (please circle your answer)

Yes

No

If **YES**, where would you like the results sent:

Email address: _____

Mailing address: _____

By signing my initials on the following line, I consent to participate in this research study:

Participant Initials

Please drop this consent form and your completed survey into one of the locked boxes in the emergency department.

Factors Contributing to the use of the Emergency Department

1. How old are you? _____

Please circle your answer to the following questions:

2. What is your gender? **Male** **Female** **Other**

3. Do you have any health care services at home? **Yes** **No**

If **YES**, please circle what services you have:

- Home care
- Home oxygen
- Assertive Community Treatment Team (ACTT)
- TelAsk
- Other, please explain:

4. Do you belong to a family practice, where you have access to a family doctor or nurse practitioner? **Yes** **No**

(**Example:** Community health centre, Family Health Team, Nurse Practitioner-Led Clinic, family doctor or nurse practitioner)

If **YES**, would you have been able to see them for care today?

Yes **No** **I do not know**

5. Do you attend programs or educational sessions about your health? **Yes** **No**

If **YES**, please circle what programs or educational sessions you attend:

- Diabetes education and care
- Cardiac rehabilitation
- Pulmonary rehabilitation
- Virtual ward
- Congestive heart failure clinic
- Asthma clinic
- HAVEN program
- Mental health and addictions program
- Cancer clinic
- Dialysis
- Geriatric and adult rehabilitation day program
- Brain injury rehabilitation
- Outpatient physical rehabilitation
- Other, please explain:

6. Why did you choose to come to the emergency department today, about your health concern or health issue?

Please circle all answers that apply:

- Referred here
- Do not have access to a family doctor or nurse practitioner
- Needed treatment as soon as possible
- Family doctor and/or nurse practitioner office was closed
- Could not wait for an appointment with my family doctor and/or nurse practitioner
- The location of the emergency department was convenient
- Walk in clinic was closed
- I am not from this area and I needed health care
- Prefer the care at the emergency department
- The emergency department offers services that I thought I needed:
 - Intravenous (IV) medications
 - X-ray
 - Sutures (stitches)
 - Casting
 - Blood work
 - Ultrasound
 - Other, please explain:
- Other, please explain:



Health Sciences North
Horizon Santé-Nord

The Brief Illness Perception Questionnaire



Laurentian University
Université Laurentienne

For the following questions, please circle the number that best corresponds to your views:

Please note that health issue is the health concern that brought you to the emergency department today

1. How much does your health issue affect your life?	0	1	2	3	4	5	6	7	8	9	10
No affect at all											Severely affects my life
2. How long do you think your health issue will continue?	0	1	2	3	4	5	6	7	8	9	10
Very short time											Forever
3. How much control do you feel you have over your health issue?	0	1	2	3	4	5	6	7	8	9	10
Absolutely no control											Extreme amount of control
4. How much do you think treatment can help your health issue?	0	1	2	3	4	5	6	7	8	9	10
Not at all helpful											Extremely helpful
5. How much do you experience symptoms from your health issue?	0	1	2	3	4	5	6	7	8	9	10
No symptoms at all											Many severe symptoms
6. How concerned are you about your health issue?	0	1	2	3	4	5	6	7	8	9	10
Not at all concerned											Extremely concerned
7. How well do you feel you understand your health issue?	0	1	2	3	4	5	6	7	8	9	10
Do not understand at all											Understand very clearly
8. How much does your health issue affect you emotionally? (Example: does it make you angry, scared, upset or depressed?)	0	1	2	3	4	5	6	7	8	9	10
Not at all affected emotionally											Extremely affected emotionally

Thank you for completing this survey.

- Please place the completed survey in one of the locked boxes in the waiting room.
- Please place the clipboard and pen provided to you in the basket beside the locked box where you dropped off the survey.

Appendix D

Follow Up Contact Card

Follow Up Contact Card **Research Study Results**

Title of Research:

Factors contributing to the use of the emergency department by Canadian Triage and Acuity Scale 4 and 5 patients

- If you would like to receive a summary of the findings from this study please go to [www._____.ca](http://www.laurentian.ca), or email the student investigator at: cx_askin@laurentian.ca

Please keep this card for your records.

Appendix E

Approval letter from Elizabeth Broadbent

Dear Christine

Yes you may use it and you may alter illness to condition or medical issue or whatever you think is suitable. Also here is a paper you may be interested in.

Regards

Liz

Appendix F

Letter of Support from the Clinical Manager of the Emergency Department

Christine,

It was very nice to meet with you and your advisor Roberta with regards to your research proposal. Please know that the ED is in support of this project and will work with you to ensure best possible data capture.

Take care,

Crystal Pitfield, RN BScN

Clinical Manager, Emergency Department
Health Sciences North/Horizon Santé-Nord
Ramsey Lake Health Centre
705-523-7100 Extension 1053
cpitfield@hsnsudbury.ca

Appendix G
Ethical Approval from the Research Ethics Board of Laurentian University



APPROVAL FOR CONDUCTING RESEARCH INVOLVING HUMAN SUBJECTS

Research Ethics Board – Laurentian University

This letter confirms that the research project identified below has successfully passed the ethics review by the Laurentian University Research Ethics Board (REB). Your ethics approval date, other milestone dates, and any special conditions for your project are indicated below.

TYPE OF APPROVAL / New X / Modifications to project / Time extension	
Name of Principal Investigator and school/department	Christine Askin with Roberta Heale, supervisor School of Nursing
Title of Project	Factors Contributing to the Non-Urgent Use of the Emergency Department by Canadian Triage and Acuity Scale 4 and 5 Patients
REB file number	2013-05-07
Date of original approval of project	June 19, 2013
Date of approval of project modifications or extension (if applicable)	
Final/Interim report due on: <i>(You may request an extension at that time using this weblink)</i>	June 19, 2014
Conditions placed on project	Final Report due on June 19, 2014

During the course of your research, no deviations from, or changes to, the protocol, recruitment or consent forms may be initiated without prior written approval from the REB. If you wish to modify your research project, please refer to the Research Ethics website to complete the appropriate REB form.

All projects must submit a report to REB at least once per year. If involvement with human participants continues for longer than one year (e.g. you have not completed the objectives of the study and have not yet terminated contact with the participants, except for feedback of final results to participants), you must request an extension using the appropriate REB form.

In all cases, please ensure that your research complies with Tri-Council Policy Statement (TCPS). Also please quote your REB file number on all future correspondence with the REB office.

Congratulations and best of luck in conducting your research.

Rosanna Langer, Acting chair
 Laurentian University Research Ethics Board

Appendix H

Ethical Approval Letter from the Research Ethics Board of Health Sciences North



Health Sciences North
Horizon Santé-Nord

Research Ethics Office
Children's Treatment Centre
41 Ramsey Lake Road
Sudbury, ON P3E 5J1
t: 705-523-7100, ext. 2409
email: reb@hsnsudbury.ca

To: Roberta Heale (student: Christine Askin)

Study Title: Factors Contributing to the Non-Urgent Use of the Emergency Department by Canadian Triage and Acuity Scale 4 and 5 Patients

REB Review Type: Delegated

Date of Review: October 1, 2013

Expiry Date: **October 1, 2014**

Notification of Initial REB Approval

Documents Approved

Application (received September 18, 2013)
Verbal Recruitment Script for Potential Participants version 3 (September 28, 2013)
Information and Consent Form version 3 (September 28, 2013)
Participant Questionnaire version 3 (September 28, 2013)
The Brief Illness Perception Questionnaire version 3 (September 28, 2013)
Follow Up Contact Card for Patients version 3 (September 28, 2013)
Protocol version 2 (August 16, 2013)

Documents Acknowledged

LU REB Approval
Letter of Support

Project Number: 950

The Research Ethics Board of Health Sciences North (HSN REB) has reviewed the above research protocol.

The above Project Identification Number has been assigned to your project. Please use this number on all future correspondence.

If, during the course of the research, there are any serious adverse events, confidentiality concerns, changes in the approved project, or any new information that must be considered with respect to the project, these should be brought to the immediate attention of the REB. The relevant forms may be found on the HSN's intranet site, but may also be obtained from our office upon request in the event that you do not have access to same.

In the event of a privacy breach, you are responsible for reporting the breach to the HSN Privacy Officer.

If the study is expected to continue beyond the expiry date, you are responsible for ensuring the study receives re-approval. The REB must be notified of the completion or termination of this study and a final report provided.

The Health Sciences North Research Ethics Board operates in compliance with and is constituted in accordance with the requirements of: TCPS 2 – 2nd Edition of the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans; the International Conference on Harmonization of Good Clinical Practices; Part C Division 5 of the Food and Drug Regulations of Health Canada; and the provisions of the Ontario Personal Health Information Protection Act 2004 and its applicable Regulations. The HSN REB is registered with the U.S. Department of Health & Human Services under the IRB registration number IRB00003090.

Initial REB Approval – Heale - Askin
October 1, 2013

Chairman Research Ethics Board
1100 University Avenue
Suite 1000
Toronto, Ontario M5G 1A5
Tel: 416-977-2000 ext. 3300
Fax: 416-977-2000 ext. 3301

The Board wishes you good luck with your study.

Sincerely,



Dr. Martin Shine, Chair, Health Sciences North Research Ethics Board

Date of Review: October 1, 2013
Protocol Number: HSN REB 13-015

Chairman Research Ethics Board
1100 University Avenue
Suite 1000
Toronto, Ontario M5G 1A5
Tel: 416-977-2000 ext. 3300
Fax: 416-977-2000 ext. 3301

Documents Received:
Application received (September 18, 2013)
"Letter of Recommendation for Potential Participants" (September 26, 2013)
"Information and Consent Form" (September 26, 2013)
Participant Questionnaire (September 26, 2013)
The first three Participant Questionnaires were all submitted on 26, 2013
Follow Up Contact Card (Participant Version 1) (September 26, 2013)
Protocol version 2 (August 16, 2013)

Documents Assessed:
REB Approval
Letter of Support

Protocol Number: HSN REB 13-015

The Health Sciences North Research Ethics Board (HSN REB) has reviewed the above research protocol.

The above project identifier number has been assigned to your project. Please use this number in all future correspondence.

If, during the course of the research, there are any changes or adverse events/complications/changes in the approved project, or any new information that may be considered with respect to the project, these should be brought to the immediate attention of the REB. The relevant forms may be found on the HSN's Informed Consent forms, but may also be required from our office upon request. In the event that you do not have access to these forms, please contact our office.

In the event of a privacy breach, you are responsible for reporting the breach to the Privacy Officer.

If the study is extended to a date beyond the expiry date, you are responsible for ensuring the study receives re-approval. The REB must be notified of the extension at least 30 days prior to the expiry date of the study.